The determinants and performance implications of change in inter-organizational relations

Cuypers, Y.K.

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Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit van Tilburg, op gezag van de rector magnificus, prof. dr. Ph. Eijlander, in het openbaar te verdedigen ten overstaan van een door het college voor promoties aangewezen commissie in de aula van de Universiteit op vrijdag 10 juni 2011 om 14.15 uur door

Youtha Kelly Cuypers

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PROMOTOR

Prof. Dr. Xavier Y.F. Martin

COMMISSIE

Prof. Dr. Will Mitchell
Prof. Dr. Niels G. Noorderhaven
Prof. Dr. Johannes Pennings
Prof. Dr. Tal Simons
Dr. Adam Tatarynowicz

To my family

PREFACE

When I started the International Business undergraduate program at Tilburg University over a decade ago, I did not know what I wanted to do or be in life. I certainly never imagined that I would go on to pursue and complete a PhD there. It was a long and winding road, dotted with the occasional detour but the intellectual enrichment and personal growth stemming from this journey was worth all the blood, sweat and tears shed along the way. Both the completion of the dissertation and my personal evolution is indebted to the support and guidance of numerous people, each of whom has played a special and important role in the process.

My advisor Xavier Martin has had a profound impact on me. I am extremely grateful for the support, patience, invaluable advice and guidance he offered me even though I'm sure I was a less than ideal PhD student at times. Time and time again, Xavier's rigor and high standards have challenged me and will continue to do so.

I have also been very fortunate to have such inspiring and outstanding scholars on my dissertation committee. I would like to thank Professors Will Mitchell, Niels Noorderhaven, Hans Pennings, Tal Simons, and Adam Tatarynowicz for agreeing to serve on my committee and for providing me with extensive feedback on my work, despite their busy schedules. I owe a special thank you to Will Mitchell for making my visit to Duke University possible and for the invaluable feedback I received during and after my stay there. I am also very grateful to Hans Pennings for getting me to think outside of the "strategy" box. Hans has also played an important role in shaping my thoughts and developing my research skills during the M.Phil. courses that he so expertly taught at Tilburg.

Joe Clougherty, my M.Sc. thesis supervisor, was the first to encourage me to consider a career in research. His encouragement played a very important role in my decision to enter the M.Phil. program and consequently, the career path that I was to embark upon. In addition, Jean-François Hennart and Harry Barkema's courses during the M.Phil. program significantly altered and developed my way of thinking and further intensified my desire to pursue a career in research.

I would also like to thank all my former colleagues from the Organization and Strategy Department, especially for their advice (research-related and otherwise) and friendly chats in the pantry. In particular, I would like to thank Dean Hennessy for making the drives from Antwerp to Tilburg that much more enjoyable and also for the invaluable advice provided along the way.

During the last few years of my PhD, I was also fortunate enough to have a fantastic office mate. David was always ready to help out, to chat and to share a few laughs. My time in Tilburg was made that much more enjoyable by having him as my office mate and friend. I would also like to thank all the other PhD students for their lively discussions and support during my time in Tilburg: Jean-Malik, Thijs, Aukje, and all the students from the other cohorts and departments that I briefly crossed paths with. Mario deserves a special mention. The advice and knowledge he has provided me - often in the middle of the night and over the last few years from the opposite side of the world - has been invaluable.

I would also like to thank all the people who shared their expert knowledge on the advertising industry with me, helping me to really understand the context that I spent so much time studying. I am also grateful to Don Draper for making me see a whole other side to the industry and for offering me distractions “in the name of research”.

Although all of the aforementioned people played a crucial role in my development as an academic and shaped my thoughts and skills, I would not have made it this far without the wholehearted support I received from my family and friends.

I acknowledge that I am very lucky to have great friends, both inside and outside of academia. They offered me welcome and necessary distractions from the PhD, as well as well-timed support and encouragement. Enrique, in particular, has been a loyal and true friend over the last decade, in spite of the geographical distance. I am also greatly indebted to Ian, whose encouragement and unconditional understanding will never cease to amaze me. He has been instrumental in keeping me sane, to the extent possible, and in motivating me to continue on this journey. Along with the numerous pep talks prior to conference presentations and job talks, he has willingly listened to my endless rants about the “hardships” of being a PhD student. Most importantly of all, he has made me smile even when it was absolutely the last thing I wanted to do. I doubt he will ever accept the pivatol role he has played in the successful completion of this journey and my ability to recently embark on a new one.

My parents deserve more gratitude than I can express in words. Without their continuous encouragement and unconditional love and support, I would not have been able to embark on this journey, let alone complete it. They have always encouraged me to pursue my dreams, even when it involved moving to the other side of the world. Last, but not least, my brother Ilya has always been there for me, and I am indebted to him on both a personal and professional level; we constantly discussed ideas, which provided useful feedback and, on occasion, fueled some healthy sibling rivalry. Although our times as PhD candidates partially overlapped, he has always been, and I am sure will continue to be, a few steps ahead of me, inspiring and motivating me to try and catch up. For these reasons and many more, I would like to dedicate this dissertation to my parents and my brother.

CONTENTS

Chapter 1

GENERAL INTRODUCTION

Research on inter-organizational relations (IORs) continues to proliferate as the result of the increasingly accepted recognition of the importance of IORs in firms' success. IORs can be defined as "the relatively enduring transactions, flows, and linkages that occur among or between an organization and one or more organizations in its environment" (Oliver, 1990:241). Within this definition, research in this area has mostly focused on alliances, equity joint-ventures (EJVs) and supplier-buyer ties. In addition, the focus of research has largely been on the reasons for relationship formation, and the performance implications of different types of collaboration, rather than their change over time. Over the last two decades research on the evolution and dissolution of IORs has started to pick up gradually. Yet, a lack of empirical research on the drivers of IOR evolution, particularly those originating from strategic or environmental change, remains. We know even less about the performance implications of changes in IORs. I aim to fill some of the gaps in this literature with this dissertation.

RESEARCH QUESTIONS AND OVERVIEW OF THE CHAPTERS

The extensive body of literature on IORs is characterized by divergent theoretical perspectives, definitions, levels of analyses and conclusions, preventing the development of a clear synthesis of what we know about IORs. One way to overcome some of these issues and to push the literature forwards is to strive towards more precision in the definitions and categorizations of IORs (Mayer and Teece, 2008). Despite the vast differences between different types of IORs, a lot of research has defined alliances so broadly that they are often impossible to

differentiate from other types of IORs (Das and Teng, 2000; Gulati, 1995, 1998). In this dissertation I will largely focus on one type of IOR, i.e., supplier-buyer ties. Supplier-buyer relations constitute one type of IORs, which can be construed as market-type procurement relationships which typically rely on competitive bidding, and differ from other forms of IORs. Supplier-buyer ties are generally aimed at gaining access to inputs or at improving efficiency or performance in a specific area, while alliances and equity joint-ventures are often pursued for corporate development purposes, i.e., to expand or reshape a firm's operations. The main goal of this dissertation is to indentify drivers of relationship change, specifically what explains whether a supplier-buyer relationship continues or is terminated, and subsequently analyze how relationship change affects firm performance – two issues on which the extant literature has only provided us limited insights. Hence, my dissertation aims to answer the following overarching question:

What are the determinants and performance implications of change in supplier-buyer relations?

In Chapter 2 I review the literature on the evolution and dissolution of IORs in general, and supplier-buyer relations in particular. In doing so, I identify established determinants of relationship change and identify gaps in the literature. I focus on the interplay between different types of IORs and their implications for relationship change. I argue that not only concurrent IORs have the possibility to affect each other, but prior collaborations can also have an impact on IOR evolution and dissolution through the occurrence of experience spillovers. In addition, I discuss how a firm's strategic actions stand to impact its IORs. I focus on the effect of corporate development activities, i.e., those activities aimed at expanding or reshaping a firm's business, in particular. I first discuss how corporate development pursued through inter-organizational

collaborations, such as alliances and equity joint-ventures, affect other IORs, further reinforcing the notion that IORs do not operate in isolation from each other. [1] After a brief general discussion of the impact of various other types of corporate development activities, I focus on mergers and acquisitions (M&As)[2], as a trigger of IOR change in particular.

In Chapter 3 I examine empirically the interplay between external corporate development activities, i.e., alliances, equity joint-ventures and M&As, and supplier-buyer ties. More precisely, I address the following research question:

> *How do firms' cumulative external corporate development activities (CDA) - i.e., the alliances, EJVs, M&As they pursue to expand and reshape their business - affect the stability of their supplier ties?*

I use the notion of experience spillovers, based on transfer theory, to elucidate how corporate development activity experience affects supplier tie stability. I argue that the occurrence and magnitude of experience spillovers depends on the similarity between these corporate development activities and supplier-buyer ties, and elaborate on two dimensions of this similarity: similarity among governance modes, and similarity in the direction (vertical vs. horizontal) of the relationship between firms. I test my hypotheses on a sample of 381 advertising agency-client ties which I track over a period of 12 years, thereby showing that not

[1] Corporate development, which is an essential part of firms' strategies, can be pursued through external activities such as alliances, equity joint-ventures, and mergers and acquisitions, or through internal actions such as new product development, restructuring, or greenfield expansions. Corporate development is often pursued through IORs, but not all IORs are pursued to achieve corporate development. Some IORs are pursued to gain access to inputs (e.g., supplier-buyer ties), for distribution purposes, to lower costs or to improve efficiency in existing operations. In addition, not all external corporate development activities can be classified as IORs.

[2] Mergers usually refer to "mergers of equals" where two companies become unified into one unit, while acquisitions refer to cases in which one company takes over another company or a subsidiary and integrates it into its own company, although the degree of integration may vary considerably across acquisition deals. Despite these differences, in reality very few true mergers occur and the terms *M&As*, *mergers* and *acquisitions* are often used interchangeably in empirical research (King et al., 2004). In line with previous research, I will use the terms M&As and acquisitions interchangeably.

all types of experience matter in the same way. These findings have implications for a generalized theory of the evolution of inter-organizational relationships.

In Chapter 4 I focus on the effect of strategic actions, specifically M&As, on the continuation of supplier-buyer ties and address the following research question:

How do buyer-level M&As affect the willingness of the buyer and the supplier to continue their relationship?

Drawing on the co-evolutionary perspective on IORs - which postulates that IORs are intertwined with the partners' strategies - I argue that the occurrence of an M&A will affect the likelihood of supplier-buyer tie continuation. I examine the implications of buyer firm M&As for supplier-buyer ties, both from the buyer and the supplier's perspective. I focus on the changes M&As trigger in the competitive dynamics in the supplier's customer portfolio, which in turn affect both the buyer's and the supplier's willingness to continue their relationship. More precisely, I focus on post-M&A changes in competitive overlap between the merged company and the other buyers in the focal supplier's customer base. I test my hypotheses on a sample of 798 advertising agency-client ties, for which the client was involved in an acquisition. By taking a two-sided view of supplier-buyer tie continuation and by examining the implications of strategic actions and the competitive dynamics they may trigger, I contribute to the supplier-buyer literature and more generally to the IOR literature. In addition, by examining what essentially constitute important boundary spanning resources, I contribute to the literature on post-M&A resource reconfiguration which has hitherto only focused on resources residing within the boundaries of the acquiring or target firms.

Whereas Chapters 2-4 focus on the drivers of IOR change, Chapter 5 addresses the performance implications of change in IORs. To fully understand these implications, I move

from the dyadic level of analysis to the portfolio level and address the following research question:

How does supplier-portfolio reconfiguration affect firms' performance?

I postulate that the effect of portfolio reconfiguration on performance will be contingent on the characteristics of the portfolio and the ties it contains. I test my hypotheses on a sample of 1,118 firms whose portfolios of relationships with advertising agencies (suppliers) I tracked for a period of 5 years. This study illustrates the importance of inter-firm resources for firm performance. Moreover, I contribute to the extant literature on IOR portfolios and on supplier-buyer ties by showing how dynamics in supplier-buyer tie portfolios impact performance.

Finally, Chapter 6 offers overarching conclusions derived from the empirical studies in Chapters 3-5, relates them with the literature discussed in Chapter 2 and other chapters, and discusses the main limitations of this research and suggestions for future research.

RESEARCH CONTEXT

This dissertation examines the research questions outlined above in the context of advertising agency-client relationships. Based on a general literature review, interviews conducted in the advertising industry as well as extensive research on the industry through trade publications, two main considerations led to the choice of this specific context. Firstly, due to the increasing importance of services in the world economy, research has started to focus increasingly on professional service firms (e.g., Greenwood, Deephouse and Li, 2007; La, Patterson and Styles, 2009; Von Nordenflycht, 2010). However, research on supplier-buyer ties is somewhat lagging behind with relatively few studies focusing on the relationships between professional service providers and their clients (e.g., Baker, Faulkner and Fisher, 1998; Chatain,

2011; Levinthal and Fichman, 1988). Yet, these services account for a large proportion of corporate expenditure and contribute to the achievement of competitive advantage (Baker and Faulkner, 1991). Although there are some differences between service supplier-buyer ties and relationships in a manufacturing setting, this does not necessarily preclude the generalizability of the results as there are also many similarities. I will discuss the benefits and drawbacks of focusing on a service context in each of the empirical chapters, thereby discussing the generalizability of the results of each study.

Secondly, the research objective of this dissertation requires an empirical context in which (1) the relationships with suppliers of the focal service are of sufficient importance to firms, (2) the sourcing strategies for the focal service vary across firms, both in terms of duration and the number of suppliers firms maintain, and (3) firms can exit relationships relatively easily. After conducting numerous interviews with advertising executives in Europe and the U.S. it became apparent that the advertising agency-client setting met these three criteria and offered a suitable context to study my research questions.

Akin to other types of supplier-buyer ties, agency-client ties are market-like procurement relationships which rely on competitive bidding, i.e., several agencies pitching for the same account. Moreover, advertising agencies constitute suppliers of important services that contribute to the success and the value of client firms by improving brand recognition and increasing sales, amongst other things (Assmus, Farley and Lehmann, 1984; Dekimpe and Hannsens, 1995; Jones, 2007; Kim, 1993). In addition, stock markets react to changes in agency relationships (Mathur and Mathur, 1996). Hence, the relationships with advertising agencies are of sufficient importance to firms to assume that the decision to switch agencies is not taken lightly or randomly.

Although it became apparent from the interviews and the trade press that firms do face switching costs - i.e., the cost of searching for a new agency and familiarizing it with the firm's products, culture and customers - when changing advertising agencies, these relationships are not characterized by high levels of physical asset specificity that could potentially make it impossible for firms to exit the relationship. Moreover, advertising agency-client relations are of a legally open-ended nature, and usually entail no more than a 90-day notice for cancellation (Horsky, 2006). Consequently, studying determinants of change and stability is facilitated in this context as it prevents the effect of the variables of interest being overshadowed by the effect of high levels of physical asset specificity or other elements, such as contractual complications, that may determine relationship duration in manufacturing settings. Moreover, there are no legal restrictions that could affect firms' sourcing options, as there are in, for example, the case of auditing services where firms can only use one auditor (Baker et al., 1998). This improves the generalizability of the findings to other contexts. Moreover, there is a lot of variety in the sourcing strategies that firms pursue when it comes to advertising, both in terms of the number of relationships they maintain and the duration of these relationships. Yet, agency executives stressed that it remains unclear what really drives these differences, suggesting that future research on these issues is well warranted.

In short, the study of supplier-buyer ties in professional service contexts is well warranted and advertising agency-client relationships offer a very interesting and suitable context to study the research questions postulated in this dissertation.

Chapter 2[1]

THE EVOLUTION AND DISSOLUTION OF INTER-ORGANIZATIONAL RELATIONS: A REVIEW AND EXTENSION OF PAST RESEARCH

ABSTRACT

We provide a comprehensive review of the literature on the determinants of the evolution and dissolution of inter-organizational relations (IORs). We identified several gaps in the current literature and proposed avenues for future research. We focused predominantly on the interplay between different types of IORs and between IORs and firms' strategic actions. Firstly, we suggested that future research should examine the possibility of experience spillovers between different types of IORs that stand to impact the evolution and dissolution of IORs. Secondly, we discussed the implications of M&As for the evolution and dissolution of IORs in general, and supplier-buyer ties in particular. Overall, we offer new propositions and suggestions to advance the IOR literature.

[1] This chapter is the result of joint work with Xavier Martin.

INTRODUCTION

Research on inter-organizational relations (IORs) continues to proliferate, but many questions remain unanswered. A lot of prior IOR research has focused on the antecedents of IOR formation, the mode of governance of these relations, the structural aspects of firms' networks of IORs, and the effects on performance from a variety of theoretical perspectives (e.g., Baum, Calabrese and Silverman, 2000; Gulati, 1998; Hennart, 1988; Oxley and Sampson, 2004; Parkhe, 1993; Stuart, 1998). Moreover, several scholars have provided a synthesis of the literature in these areas (e.g., Barringer and Harrison, 2000; Borgatti and Foster, 2003; Oliver, 1990). Consequently, we know a lot about IOR formation and the benefits and performance implications of different types of IORs. However, we know comparatively little about how different types of IORs evolve and eventually come to an end. Although IOR termination has certainly enjoyed some attention, it has often been treated as an undesirable outcome or as failure (e.g., Barkema et al., 1997; Park and Russo, 1996). Yet, dissolution can also be conceived of as a conscious strategic action, one of which we have only limited understanding (Hennart et al., 1998; Jones et al., 1998). This paper is aimed at furthering our understanding of the evolution and dissolution of IORs in general and supplier-buyer ties in particular.

One of the main obstacles in providing a synthesis of the literature on the evolution and dissolution of IORs stems from the differences between IORs. Much of the previous literature has either focused on one type of IOR (e.g., alliances or equity joint-ventures) under the assumption that the findings are generalizable to all other types, or focused on one type without considering the broader implications for other types of IORs (Oliver, 1990). Oliver (1990:241) defined IORs as "the relatively enduring transactions,

flows, and linkages that occur among or between an organization and one or more organizations in its environment". The most commonly studied IORs are alliances, equity joint-ventures, and supplier-buyer ties. Despite the differences between these IORs, a lot of research has used very broad definitions, particularly for alliances, making it almost impossible to differentiate one type from another or draw general conclusions about specific types of IORs (e.g., Das and Teng, 2000; Gulati, 1995, 1998). Moreover, some studies have theoretically discussed alliances, while empirically studying equity joint-ventures or including both types of IORs without controlling for any differences (e.g., Xia, 2010). Recently, the literature has been advanced by a call for more precision in the definitions and categorizations of IORs in order to avoid coming to seemingly contradictory conclusions (Mayer and Teece, 2008). In line with this, we distinguish between different types of IORs, and aim to provide more focused definitions of the types of IORs we discuss.[2]

Alliances can be defined as collaborative arrangements governed by contracts whereby two or more organizations each contribute resources in pursuit of economic goals (Martin and Salomon, 2003). Equity joint-ventures (EJVs) achieve their cooperative purpose by creating a new entity, which requires equity contributions as well as commitment of resources and employees to make the new venture work (Martin and Salomon, 2003). Alliances and EJVs are often pursued to achieve corporate development, i.e., to expand or reshape the firms' business by for example expanding into new

[2] Although we try to highlight and take into account the differences between different IORs as much as possible, providing a review of the literature that has grouped different IORs together will inevitably lead to us doing the same when discussing some studies. In fact, in some cases it is even impossible to accurately assess which types of IORs the study has focused on based on the definition and the description of the data provided. Moreover, we draw on research from different streams which in some instances uses different labels for similar concepts, or differ in their definitions of some concepts. We recognize that there is also heterogeneity within each category of IORs. In this chapter we restrict our discussion to differences across categories, but in Chapter 3 we touch upon some of the differences within categories.

geographic or product markets. EJVs and alliances have a lot of commonalities and are often studied under the general label of "alliances". Yet there are some important differences. For example, EJVs usually entail more knowledge sharing, higher set-up and dissolution costs, and tend to be of a longer duration than alliances (Harrigan, 1988; Mowery et al., 1997; Pangarkar, 2003; Sampson, 2007; Santoro and McGill, 2005). Supplier-buyer relations are yet another distinct type of IOR differing from alliances or EJVs as they are market-type procurement relationships which typically rely on competitive bidding. Supplier-buyer relations differ from alliances in terms of their underlying contracts and administrative structures, the level of exchange of proprietary information that takes place, the approach to dispute resolution and likelihood of termination following conflict, amongst other things (Mayer and Teece, 2008). Moreover, unlike many alliances and EJVs, supplier-buyer ties are generally not pursued for corporate development purposes, but rather to gain access to key resources or to improve operational efficiency.

The dynamics and the discrepancies in goals between partners - and consequently the reactions to certain events occurring within or outside the collaboration - also vary considerably across different types of IORs. Although there are some underlying commonalities - i.e., the need to select and negotiate with potential partners, organize the form of collaboration and negotiate appropriate contracts, manage and coordinate activities across organizational boundaries, evaluate and adjust the collaboration as conditions change - the differences between these types of IORs should not be ignored as they stand to impact the conclusions and generalizability of research in the IOR and

strategy field, and open up interesting avenues for research on the interplay between these different types of IORs.

We first provide an overview of the literature on relationship evolution in general, focusing mostly on alliances and EJVs. Subsequently, we focus on supplier-buyer tie evolution in particular. Next, we discuss the literature on relationship dissolution. Again, we focus on IORs in general and supplier-buyer ties in particular. Appendices 1-4 offer an overview of the literature we discuss. Subsequently, we identify several gaps in the literature. Firstly, we discuss the interplay between different types of IORs. Secondly, we examine the implications of strategic actions, M&As in particular, for relationship evolution and dissolution. In doing so, we push the literature forwards by examining how IORs are affected by other actions the firm takes, and how they co-evolve with the firm's strategy. In the process we derive testable propositions for future research.

IOR EVOLUTION AND DISSOLUTION: CURRENT LITERATURE

IOR Evolution

The evolution of IORs has often been depicted as a multi-stage process (de Rond and Bouchikhi, 2004). Some scholars argued that IORs go through several predictable life-cycle stages, i.e., partner selection and courtship, negotiation, implementation and operation, or a variant thereof (Achrol, Sheer and Stern, 1990; D'Aunno and Zuckerman, 1987; Forrest and Martin, 1992). Others argued that IORs evolve as a result of unexpected consequences of actions, but they do not follow a predictable trajectory as is often assumed in the life-cycle perspective (de Rond and Bouchikhi, 2004). Doz (1996) portrayed alliance evolution as a sequence of learning, re-evaluation and re-adjustment

stages. As partners learn by interacting and react to shocks triggered by events taking place within or external to the relationship, they evaluate the alliances for efficiency and each other for equity and adaptability and subsequently revise the initial conditions of the alliance (Ariño and de la Torre, 1998; Doz, 1996). Hence, changes in the scope, governance or purpose of IORs can be conceived of as the result of unexpected events, either within the collaboration, within one of the partner organizations or in the environment.

Several other conceptual studies focused on the dynamics of IORs. Koza and Lewin (1998) argued that strategic alliances are embedded in, and consequently co-evolve with, firms' strategies and their institutional and competitive environment. Akin to these arguments, Hite and Hesterly (2001) suggested that emerging firms' networks shift together with their evolving resource needs and challenges when they progress from emergence to early growth. Kumar and Nti's (1998) dynamic theory of knowledge intensive alliances argued that the partners' absorptive capacities, the patterns of interaction amongst them, and changes in the environment and in the strategies of the partners, determined the evolutionary path of alliances. More precisely, partners' reactions to discrepancies between expected and actual outcomes of collaborative processes will determine how the collaboration evolves.

Reuer, Zollo and Singh (2002) offered one of the few empirical studies on IOR evolution by focusing on the occurrence and determinants of alterations in alliance contracts, boards and monitoring mechanisms. Their focus was largely on characteristics of the relationship and the partners - i.e., prior experience, the alliance scope, its division of labor, and the relevance of the alliance to the partner firms - rather than on changes

that may act as shocks to the IOR. Reuer and Ariño (2002) fill this gap by showing that in addition to the initial conditions of the alliance, strategic change in the partner organizations is also an important determinant of the likelihood of contractual renegotiations in alliances. Nevertheless, contrary to claims in earlier conceptual work, they failed to find statistical evidence of environmental change as a trigger of alliance dynamics. However, they did not distinguish between different types of environmental change and only focused on one aspect of IOR evolution, i.e., contractual renegotiations.

Network research provided some additional insights. For instance, Madhavan et al. (1998) showed that regulatory and technology shocks change the structure in alliance networks. Koka et al. (2006) postulated that changes in resource munificence and in environmental uncertainty are key drivers of network evolution. In a similar vein, Hoffman (2007) argued that the evolution of firms' alliance portfolios is a function of their strategic uncertainty and resource endowments, environmental uncertainty, as well as the actions of other firms they are directly or indirectly linked to. Lorenzoni and Lipparini's (1999) study of three networks in the Italian packaging industry showed that network change is triggered by events at the industry level. Despite these valuable insights, more empirical research is well warranted to get a more comprehensive understanding of the implications of different types of strategic and environmental change for IORs.

Supplier-Buyer Tie Evolution

Given the differences between supplier-buyer ties and other types of IORs, such as alliances and EJVs on which the bulk of the research outlined above focuses, it is well worth examining the literature that discusses supplier-buyer ties in particular. Much of

the literature on supplier-buyer relationships has focused on explaining the different types of relationships and sourcing strategies firms maintain, the importance of knowledge sharing and the development of relation-specific assets in these relationships, the role of trust, and on their performance implications (e.g., Kotabe et al., 2003; Lazzarini, Miller and Zenger, 2008; Mesquita, Anand and Brusch, 2008; Mudambi and Helper; 1998; Srinivasan and Brush, 2006). Yet, we have only limited insights into the way these relationships evolve. Dwyer et al. (1987) described the evolution of supplier-buyer ties based on five stages: (1) achieving awareness of the need for an exchange partner and recognizing potential partners, (2) the exploration phase in which the relationship is established and collaboration starts, (3) expansion and deepening of the relationship, (4) commitment stage and (5) dissolution.

In line with these arguments, Asanuma (1989) suggested that buyers in the Japanese automobile and electric machinery industry start off supplier relations with relatively simple tasks, and subsequently move on to more ambitious joint or delegated projects involving customized products as the relationship evolves and matures, and as relation-specific skills are developed. Lorenzoni and Lipparini (1999) also observed an evolution in supplier-buyer ties towards closer and stronger relationships as a result of changes in the buyer's environment that required more specialized products from the suppliers. In professional services contexts, similar dynamics were observed. Levinthal and Fichman (1988) showed that in the early stages of client-auditor relations, the rate at which those ties ended increased with time and after this phase, labeled the "honeymoon" period, the rate at which relationships ended decreased with time, which they attributed to the development of relation-specific assets.

At the network level of analysis, Li and colleagues (2010) found that the evolution of networks of supplier-buyer ties within business groups is driven by changes in the interdependencies between network members. Strategic actions, such as the pursuit of unrelated diversification, alter the resource requirements of buyers and the interdependencies amongst network members, thereby altering supplier-buyer networks.

This brief overview of extant research illustrates the scarcity of work in this area, at the dyadic level of analysis but even more so from a supplier network or portfolio perspective. Given the differences between supplier-buyer ties and other types of IORs (Mayer and Teece, 2008) it is imperative that we push this literature further to gain a more comprehensive understanding of these relationships.

IOR Dissolution

In general, much less is known about relationship dissolution than about, for example, relationship formation and the performance effects of IORs (Greve et al., 2010). As the literature review in the previous sections already hinted at, dissolution is often the result of instability. In addition to this work, a number of studies have examined relationship, partner and environmental level determinants of relationship dissolution from a variety of theoretical perspectives.

Ring and Van de Ven (1994) argued that IORs can be terminated for reasons exogenous (e.g., a shift in political regime) or endogenous to the collaborating parties (e.g., a shift in organizational commitments or performance, or conflict between partners). Based on transaction cost economics a number of scholars have attributed IOR dissolution to competition between partners, ownership distributions in the case of EJVs, and the threat or manifestation of opportunistic behavior (e.g., Dhanaraj and Beamish,

2004; Killing, 1983; Park and Russo, 1996; Park and Ungson, 1997). According to real option theory JV instability – which refers to a number of different outcomes including dissolution and buy-outs – is determined by the parties' decision to exercise the option or let it expire, which in turn is a function of exogenous uncertainty (Kogut, 1991; Vassolo, Anand and Folta, 2004). Cuypers and Martin (2007) integrated transaction cost economics, real option theory and learning theory to discuss how factors endogenous and exogenous to the joint-ventures influence its instability. They postulated that the likelihood of JV instability, and the form it takes, is determined by environmental change, asset specificity and the options firms hold. According to resource dependence theory, IORs are formed because firms depend on resources of other organizations and they use IORs to control this dependence (Pfeffer and Salancik, 1978; Pfeffer and Nowak, 1976). When this dependence or their resource needs change, relationships will be terminated (Das and Teng, 2000; Seabright, Levinthal and Fichman, 1992). Similarly, when partners' skills and capabilities converge and hence they have little to gain from continuing the collaboration, relationship dissolution becomes imminent (Nakamura et al., 1996). Yet, according to social exchange theory, the development of individual attachments can attenuate these disruptive effects, while the departure or mobility of key individuals increases the risk of tie dissolution (Broschak, 2004; Seabright et al.1992).

In addition, factors such as cultural differences between the partners, market overlap and multimarket contact, incompatibility of resources and skills, conflict, changes in firm ownership, shifts in bargaining power, and tensions between competing forces - such as cooperation versus competition, rigidity versus flexibility and short-term versus long-term orientation - have been identified as determinants of IOR dissolution

(Barkema and Vermeulen, 1997; Das and Teng, 2000; Greve et al., 2010; Inkpen and Beamish, 1997; Park and Ungson, 1997; Steensma et al., 2008; Yan and Zeng, 1999).

This overview suggests that a fairly deterministic view of relationship dissolution prevails in the literature as a lot of research has focused on factors that make relationship dissolution virtually inevitable. The failure to recognize relationship dissolution as a conscious strategic choice in most of the literature, with the real option literature being a notable exception, is accompanied by the equation of termination with failure in much of the early work (Jones et al., 1998; Yan and Zeng, 1999).

Recent work, however, has suggested that IORs - and thereby the decisions pertaining to their formation, operation, adjustment and termination - are embedded in the evolving strategies of the partner firms (Ariño and de la Torre, 1998; Koza and Lewin, 1998; Reuer and Ariño, 2002; Reuer and Zollo, 2005). Nevertheless, research on the effect of strategic actions on IOR dissolution remains scarce. To illustrate the importance of studying IORs in light of the firm's broader strategy, we will focus on the interplay between different types of IORs and between IORs and M&As later on.

Supplier-Buyer Tie Dissolution

Baker, Faulkner and Fisher (1998) provide one of the most comprehensive studies of the determinants of supplier-buyer tie dissolution, taking into account competitive, power and institutional forces. In line with previous work, they found evidence of the development of structural and individual attachments that act as stabilizing forces (Broschak, 2004; Levinthal and Fichman, 1988; Seabright et al., 1992). These attachments in turn are affected by the departure of individuals or major organizational changes like M&As, leading to an increase in the likelihood of tie dissolution. Moreover,

the status of exchange partners and the market structure, as well as the level of rivalry also have a significant effect on tie continuation (Baker et al., 1998; Jensen, 2006). Some of these determinants of tie dissolution have been shown to impact other types of IORs as well. However, the role of the structure of the market and the level of rivalry is particularly relevant for supplier-buyer ties as they are essentially market-based procurement relationships based on competitive bidding. Suppliers' failure to keep up with technological advancements or their inability to live up to expectations are also reasons for supplier-buyer tie dissolution (Lazzarini et al., 2008).

Despite the valuable insights accrued through this work, a critical omission remains, i.e., the failure to explicitly take into account that both the buyer and the supplier can terminate the relationship. Moreover, previous research has fallen short in examining how changes on one side affect the willingness of the other exchange party to continue the relationship. At best the literature has taken into account the characteristics of both parties (e.g., Baker et al., 1998), but it has largely failed to take into account the dynamics and reactive processes that take place in relationships when changes take place in one of the firms. This omission stems from the implicit assumption underlying most of the literature on supplier-buyer ties that suppliers want to retain as much business as possible and are therefore reluctant to terminate relationships, and consequently, buyers call the shots.[3] However, this is not necessarily the case and a two-sided view of relationship dissolution would improve our understanding of the dissolution of supplier-buyer ties.

[3] Although IOR research in general also tends to takes a one-sided view, this is less problematic as there is no underlying assumption that one party would be willing to keep the relationship going no matter what. Moreover, the factors that lead to the desire to terminate the relationship on one side are likely to also affect partners on the other side if the roles were reversed, which is not necessarily the case in supplier-buyer ties.

EXTENSION OF THE LITERATURE

The previous sections highlighted the current state of the literature on the evolution and dissolution of IORs in general, and supplier-buyer ties in particular. In this section, we will discuss several gaps in the literature and propose avenues for future research. We highlight the importance of considering IORs as being a part of firms' strategies, thereby recognizing the interplay between different types of IORs and the impact of other strategic actions on IORs.

We first focus on the interplay between different types of IORs, including IORs that are aimed at corporate development and other forms of IORs such as supplier-buyer ties. Next, we examine how strategic actions affect IORs in general and supplier-buyer ties in particular. A wide variety of strategic actions, such as international expansion, corporate restructuring and M&As, stand to impact IORs. After a brief discussion of the impact of some of these actions, we focus on the effect of M&As in particular. M&As entail very high levels of resource commitment and are difficult to reverse. Moreover, they often entail changes in strategic direction, change in organizational structure, individual turnover, and consolidation of resources. As a result, they constitute important strategic actions with far-reaching implications for the organizations involved in the deal, but also for other stakeholders of the firms, making this a particularly interesting form of corporate development to study. We focus on the immediate and longer-term consequences of one of the collaborative partners becoming involved in an M&A with a third party. Subsequently, we move away from the dyadic perspective and focus on the implications of M&A for networks of IORs.

The Interplay between Different Types of IORs

A substantial portion of the literature on IORs - particularly the work focusing on the dynamics and processes - focuses on dyadic relations in isolation, while these relationships are in fact part of a larger system of IORs (Baker and Faulkner, 2002; Madhok and Tallman, 1998; Shipilov and Li, 2010). For example, firms often maintain a portfolio of concurrent alliances to achieve their strategic goals (Wassmer, 2010). The network literature has extensively studied the system of IORs a firm is embedded in, but only a fraction of this work has focused on the dynamics in networks and the interplay between different types of relationships has been all but ignored.

Firms may use multiple suppliers for the same component or service to reduce dependence on any single supplier (Baker, 1990; Martin et al. 1995; Mudambe and Helper, 1998). In those cases, changes in, or the termination of one of those relationships may alter the power balance and the level of dependence in relationships with other suppliers of the focal component as well. Similarly, firms may use multiple concurrent alliances or joint-ventures to pursue one specific corporate development goal. Or, they can maintain a portfolio of relationships with suppliers of a specific product or service, while also maintaining several concurrent alliances aimed at corporate development. In short, firms often pursue a variety of IORs simultaneously to achieve a strategic goal, or several different goals, causing relationships to affect one another and their faith to be intertwined.

Recently, scholars have started to examine how concurrent IORs affect each other. For example, Xia (2010) examined how a focal equity joint-venture's survival is affected by the addition of EJVs in the same country or industry. The addition of EJVs

reduces the focal firm's dependence on its partner and enhances its relative power in the focal EJV, thereby increasing the likelihood of relationship dissolution (Xia, 2010). While Xia (2010) focused on the interplay between IORs of the same type – i.e., equity joint-ventures aimed at corporate development, Lazzarini, Claro and Mesquita (2008) examined the interplay between different types of concurrent alliances. They focused on how jointly occurring horizontal (supplier-supplier) and vertical (supplier-buyer) alliances reinforce or undermine one another. The results suggested that firms' desire to keep their bargaining power outweighs their desire to achieve learning effects that would occur by maintaining both intense vertical and horizontal relationships. As a result, firms weaken vertical ties when horizontal ties amongst suppliers become more intense, and vice versa. In addition, recent work showed that vertical ties drive the formation of horizontal ties (Shipilov and Li, 2010). This work has taken an important step towards understanding the interplay between different types of IORs, but a lot of questions remain.

In addition to the need to examine the interplay between concurrent IORs in more detail, continuing the trend of the research outlined above, the examination of the inter-temporal interactions between IORs is also well warranted. Lavie and Rosenkopf (2006) provided some initial insights into this by showing that the domains in which firms form alliances and the partners they choose are a function of their past alliances and their desire to balance exploitation and exploration through alliances. Yet, we know very little about the way experience with one type of IORs affects other types of IORs, both in terms of how they are managed and in terms of their outcomes. Several scholars have argued that firms develop an alliance capability through the accumulation of alliance

experience (e.g., Anand and Khanna, 2000; Kale and Singh, 2007). Or in more general terms, firms develop a "relational capability" or a "collaborative capability" through experience, which improves their ability to identify suitable potential partners, choose an optimal governance structure, negotiate the form of the collaboration, manage and monitor the venture, internalize or transfer specialized knowledge, and determine when to terminate the collaboration (Lorenzoni and Lipparini, 1999; Reuer et al., 2002; Simonin, 1997). Despite these valuable insights into the outcomes of IORs, several important issues remain unaddressed. Firstly, most of the literature on the effect of experience in the context of IORs - alliances and EJVs in particular - has focused on the performance implications rather than on the dynamic implications. Moreover, this stream of work has almost exclusively focused on intra-activity learning, i.e., learning from experience with the same type of IOR, ignoring the possibility that firms can apply the knowledge obtained through experience with one type of IOR to other types of relationships.

The limited work that does address these two issues suggests that this is a fruitful avenue for future research. Several studies found a positive relationship between alliance and joint-venture experience and the longevity of these collaborations (Barkema et al., 1997; Pangarkar, 2003; 2009). In addition, firms' prior alliance experience affects alliance dynamics, and the occurrence of post-formation governance changes in particular, as well as the favorability of alliance outcomes (Reuer and Zollo, 2005; Reuer et al., 2002). Hence, there is some evidence that prior experience affects the dynamics and the likelihood of dissolution of IORs. Furthermore, some scholars implicitly assumed that firms learn how to improve performance of one type of IOR by gaining experience with other types. For example, Kale et al. (2002) distinguish between the effect of

experience on alliances and on EJVs, yet their experience measure contains both types of collaborations. Hence, they implicitly assumed that the experience developed through one activity is also of use in the other activity, i.e., experience spillovers occur between different activities.

The idea that experience spillovers occur between different types of IORs, is grounded in the fact that firms are confronted with similar challenges in these different IORs. For example, despite the differences between them, alliances, EJVs, and supplier-buyer ties all require firms to select appropriate partners, manage and coordinate activities across organizational boundaries, design and negotiate appropriate contracts, evaluate performance, manage cultural differences and decide how to adjust the collaboration and when to terminate it. Sampson (2005) argued that firms learn how to deal with such complexities by gaining experience with any type of alliance, and subsequently use the skills they developed in the context of other alliances as well. This would suggest that firms can develop a general expertise in relationship management that can be useful across collaborations (Madhok and Tallman, 1998). Zollo and Reuer (2009) found evidence of experience spillovers from alliances to M&A, but we know very little about the determinants and consequences of experience spillovers between different types of IORs.

Hence, additional research is needed in order to fully understand the effect of experience spillovers on the outcomes and the evolution of different types of IORs. One of the skills firms develop through collaborative experience is that of knowing when and how to adjust or terminate the collaboration (Cuypers and Martin, 2007; Martin and Cuypers, 2010; Reuer et al., 2002; Simonin, 1997). Hence, gaining experience with this

aspect of collaboration, which can be gained through different types of IORs, will affect the evolution and termination decisions of different types of IORs.

Proposition 1: Experience with one type of IOR will spill over to other types, thereby affecting the stability and duration of those relationships.

In order for this literature to advance and provide conclusive insights, understanding the differences and similarities between different types of IORs is crucial. Continuing the past trend in the literature of grouping different types of IORs together and labeling them all as "alliances" (e.g., Das and Teng, 2000; Gulati, 1995, 1998) would impede the development of the literature on experience spillovers between IORs or could lead to inaccurate conclusions. Experience spillovers are driven by similarities between the activities at hand (Cormier and Hagman, 1987; Gick and Holyoak, 1987; Gick and McGarry, 1992; Zollo and Reuer, 2009) and although different types of IORs have a lot of commonalities, there are also some crucial differences - for example in the antecedents, form and longevity of collaboration - that stand to impact the occurrence and magnitude of experience spillovers.

Proposition 2: The occurrence and magnitude of experience spillovers between different types of IORs will depend on the similarity between the IORs.

In short, IORs do not operate in isolation from the firms' broader strategies and actions. The maintenance of other concurrent IORs, the formation of new IORs and the experience gained in the past with different types of relationships all stand to impact the

evolution and dissolution of a focal IOR. In addition, as we will discuss in the next section, other strategic actions may also influence the evolution of IORs.

The Interplay between IORs and Corporate Development Activities

As previously noted, the idea that inter-organizational relations co-evolve with firms' strategies has featured in a number of conceptual studies and in several case studies (e.g., Hite and Hesterly, 2001; Hoffman, 2007; Koza and Lewin, 1998, 1999). However, the emerging body of research in this area is yet to examine how specific actions firms take in pursuit of strategic goals influence IORs. One starting point would be to rigorously examine how firms' corporate development activities, which constitute an integral part of their strategies, influence their existing IORs. Xia's recent work (2010) already took one step in that direction. More precisely, his work indicated that as firms continue their corporate development efforts, through the addition of other collaborative arrangements in the same industry or country to their portfolio, they influence the stability of their existing equity joint-ventures. Moreover, the pursuit of acquisitions - which constitute another strategic action aimed at corporate development - in the same industry or country as a focal partnership by one of the partners also reduces the likelihood of continuation for the focal partnership. Similarly, Ariño and de la Torre's case study (1998) showed that the acquisitions of a company that could perform many of the same functions as a firm's alliance partners, distorted the balance in the relationship, causing it to change and eventually dissolve.

In addition, there is evidence that firms' international expansion activities influence, and are influenced by, the relationships they maintain with suppliers (Buch, 2000; Martin et al., 1995, 1998; Nigh, Cho and Krishnan, 1986; Schrage and Lu, 2009;

Seth and Quijano, 1991; Wan et al., 2008). For example, in the automotive industry international expansion often leads to ties between assemblers and component manufacturers being extended and recreated abroad (Martin et al., 1995). Yet, following customers abroad may lead to the erosion of the social relationships underlying the inter-organizational relationships, resulting in weakened relationships (Wan et al., 2008). Hence, there is some evidence to support the idea that some forms of corporate development affect firms' IORs. Makino and colleagues (2007), on the other hand, failed to find a significant effect of another form of corporate development, i.e., firm restructuring, on the termination of international joint-ventures formed by Japanese parents. In short, more systematic research is needed to fully understand which forms of corporate development and which activities influence the different types of IORs. Hence, we take a first step at understanding this complex interplay by discussing the effect of one specific corporate development activity, namely, M&As on IORs in general and subsequently on supplier-buyer ties in particular.

We put forth two main pathways to advance the literature on the interplay between M&As and IORs. On the one hand, M&As can be viewed as a source of disruption to IORs. We will first discuss disruptive effect of M&As in general, followed by a discussion of some forms of disruption that are particularly relevant to supplier-buyer ties. On the other hand, M&As can be seen as an opportunity for reconfiguration of IORs, which applies to both supplier-buyer ties and other IORs.

M&As as Disruptions to IORs

The disruptive effects of M&As on the organizations directly involved have been well documented. There is ample evidence of increased individual turnover, decreased

employee morale and productivity, structural changes, resistance to change, and conflict during the course of M&As (e.g., Hambrick and Cannella, 1993; Haspeslagh and Jemison, 1991; Paruchuri, Nerkar, and Hambrick, 2006; Walsh, 1989). In addition, we know from previous research that these same factors are likely to cause disruptions in IORs, potentially leading to their dissolution (Ariño and de la Torre, 1998; Baker et al., 1998; Broschak, 2004; Seabright et al., 1992). Combining these insights, we postulate that the internal disruptions caused by M&As will also spillover to the firms' IORs, thereby affecting their stability. As a result of the differences between IORs, some types of collaboration may be more resilient than others, helping them to overcome the disruptions and changes that M&As bring about. Yet, we expect all types of IORs to be at risk of being affected by the disruptions caused by M&As, although the degree of disruptions may vary across types.

In addition, M&As often lead to changes in the firms' resource requirements, as well as altering the resources available inside the firm, which in turn will affect the relationships they seek to establish or maintain to gain access to the resources they require (Cui, Calantone, and Griffith, 2010; Seabright et al., 1992). Keeping everything else constant, we would expect IORs to face an increased likelihood of dissolution following an M&A involving one of the collaborating partners.

> *Proposition 3: The occurrence of an M&A in one of the collaborative partners' organization will increase the likelihood of relationship dissolution.*

M&As as Disruptions to Supplier-Buyer Ties

In addition to the M&A induced disruptions we discussed for IORs in general, which also apply to supplier-buyer ties, we identify a number of additional factors that stand to impact both the supplier and the buyer's willingness to continue the relationship after one of the parties is involved in an M&A. We focus on changes in status and competitive overlap in the supplier's customer base as a result of buyer or supplier-side M&As.

M&As may disrupt the competitive dynamics in suppliers' customer portfolios. Competitive overlap in the supplier's customer base, i.e., the degree to which it includes buyer firms that compete in the same industry, creates indirect linkages between rivals through the supplier. Firms are often reluctant to share partners with rivals as the latter may free ride on relational investments or benefit from information leakage or inadvertent spillovers (Gimeno, 2004). Consequently, when supplier M&As increase competitive overlap, the suppliers may end up losing customers (Rogan, 2008).

> *Proposition 4: An increase in competitive overlap between a focal buyer and the other buyers in the supplier's customer portfolio, caused by a supplier-level M&A, will decrease the likelihood that the relationship with the focal buyer continues.*

Yet, these concerns are not limited to supplier-side M&As. When two buyers are consolidated through a merger or acquisition, they have to take into account the possibility that their suppliers may also be serving some of the competitors of the firm

that they are being combined with.[4] Hence, we expect buyers to take the degree of competitive overlap in each supplier's customer base into consideration when deciding which ties to maintain. In addition, suppliers may preemptively end their relationship with the merging customer out of fear of losing important buyers due to an increase in competitive overlap.

> *Proposition 5: An increase in competitive overlap between a focal buyer and the other buyers in the supplier's customer portfolio caused by a buyer-level M&A, will decrease the likelihood that the focal relationship continues.*

M&As may also have status implications, which extend beyond the firms directly involved in the deal. An organization's status is largely determined by its affiliations with other prestigious firms (Podolny, 1993; Podolny and Phillips, 1996). Organizations face status contagion through associations, meaning that they can improve their status by interacting with organizations that enjoy high status but they also risk status decline when they are affiliated with lower status organization (Washington and Zajac, 2005). These status contagion processes, in turn, have implications for the success and performance of firms, as their ability to attract customers and partners depends on their reputation and status (Jensen and Roy, 2008; Podolny, 1993; Stuart, 2000). However, their ability to retain existing customers or partners may also be affected by their status. When a supplier becomes involved in an acquisition that deteriorates its status, by either being acquired by or acquiring a lower status firm, buyer firms may perceive this as a negative signal.

[4] In the case of horizontal M&As, i.e., M&As between firms operating in the same industry, the acquisition does not change the industries the newly combined firm competes in. In other types of M&As the situation may be quite different as the expansion into a new industry through an acquisition also brings in a new set of competitors, some of whom the firm may be linked to through pre-existing supplier relationships.

Hence, we would expect the status implications of supplier-side M&As to affect the buyer's willingness to continue the relationship with the merging suppliers.

Proposition 6: Buyers are more likely to terminate their relationships with a merging supplier if the supplier's status is negatively affected by the M&A.

Buyer-level M&As may also affect suppliers' status and thereby their willingness to continue the relationship. The supplier of a buyer being acquired will experience a negative status effect if the acquirer is lower in status than the target, or if it is linked to suppliers that have a lower status than the focal supplier. Similarly, the supplier of a company acquiring a lower status target, or a target that works with low status suppliers, could potentially experience a decline in status if it continues to work with the merged buyer. If suppliers become directly or indirectly connected to organizations that could potentially bring down their status through the buyer-level M&A, status anxiety is like to prompt suppliers to detach themselves from the merging buyer in an attempt to protect their own status (Jensen, 2006).

Proposition 7a: Suppliers will terminate their relationship with a merging buyer if, as a result of the buyer-level M&A, they become linked to a lower status buyer.

Proposition 7b: Suppliers will terminate their relationship with a merging buyer if, as a result of the buyer-level M&A, they become indirectly linked to low-status suppliers.

In addition, the relative standing of a focal supplier in comparison to the merging buyer's other suppliers, is likely to impact its willingness to continue the relationship. In its traditional sense, the theory of relative standing focuses on the importance of individuals' status relative to that of others in a proximate social setting (Frank, 1985). The few M&A studies that have invoked the concept of relative standing have used it to explain individual reactions to M&As and individual turnover (Hambrick and Cannella, 1993; Lubatkin et al., 1999; Ranft and Lord, 2000; Very et al., 1997). This work showed that executives, scientists, engineers and sales personnel of target companies are more likely to depart if they enjoy a low relative standing in comparison to their counterparts at the acquiring organization (Hambrick and Cannella, 1993; Ranft and Lord, 2000). Saxton and Dollinger (2004) pushed this even further and extended the notion of relative standing to other attributes of the acquired company.

We deem the notion of relative standing to also be of relevance to supplier-buyer ties. Suppliers enjoy a certain relative standing in their buyers' portfolios of suppliers. A reconfiguration of that portfolio as a result of the buyer becoming involved in an M&A can significantly alter this relative standing. For example, a lead supplier - who enjoys a high relative standing - of a company that is subsequently acquired may suddenly become a lower-tier supplier of the merged company, thereby losing considerable status relative to the other suppliers. We expect changes in suppliers' relative standing to affect post-M&A supplier-buyer tie continuation.

Proposition 8: Negative changes in the status of a supplier with its buyer (i.e., loss of relative standing) following the buyer's M&A will increase the likelihood of the supplier ending the relationship.

M&As as Opportunities to Reconfigure IORs

Acquisitions are often pursued to gain access to specific resources that cannot be obtained separately through the market and that are hard or impossible to imitate or build up in a short period of time. IORs certainly fit this resource profile as they are often characterized by individual attachments or relation-specific assets that prevent replication or decoupling from the original context (Kotabe et al., 2003; Seabright et al., 1992). Developing strong and valuable IORs takes considerable time and effort (Heide and John, 1990; Martin et al., 1995). In addition, valuable partners are scarce and have a limited capacity for collaboration, making IORs difficult to imitate or replace. Consequently, IORs are important resources that contribute to firm performance and value creation (Dyer and Singh, 1998; Madhavan et al., 1998; Madhok and Tallman, 1998). As a result, some firms attempt to acquire customer, supplier or other types of relationships through M&As (Anderson et al., 2001; Rogan, 2008). IORs can consequently be construed as resources that are subject to reconfiguration.

Several scholars focused on the dynamics of post-M&A resource reconfiguration - resource redeployment and asset divestiture in particular - and its effects on business change and on firm performance (e.g., Capron et al., 1998; Capron, 1999; Karim and Mitchell, 2000). Yet, their work focused largely on resources residing within the target or acquirer's firm boundaries. Despite the fact that resources that span across firm boundaries, such as IORs, are deemed critical for a firm's success, much of the literature has failed to discuss how these resources are reconfigured following an acquisition. The key difference with the reconfiguration of internal resources is that the acquiring firm is constrained by the fact that it does not have sole ownership or control over inter-firm

resources. The focal resources are essentially collectively owned and can only be accessed through the collaboration, and hence, reconfiguration decisions will also be subject to the partner's willingness to continue the cooperation post-M&A. In other words, after an acquisition the focal firm may decide to terminate some of its inter-organizational collaborations while maintaining others, but its partners may also opt to terminate the relationships. Consequently, examining the effect of M&A on IORs requires a two-sided perspective to fully understand the implications of M&As on the dynamics and dissolution of IORs.

From the acquiring companies' perspective, invoking insights from the resource redeployment literature, we would expect the likelihood of tie continuation after an acquisition to be determined by the strength of the relationship and the quality of the partner (Capron, 1999; Capron et al., 1998; Capron et al., 2001).[5] Hence, we propose:

Proposition 9a: Acquiring or merging firms will retain or redeploy the strongest IORs.

Proposition 9b: Acquiring or merging firms will retain or redeploy the IORs that give them access to the best partners (i.e., those that have the most to offer).

However, previous research showed that acquirers often exhibit a preference for their own resources, regardless of their relative strength. As a result, the target's resources are more often divested than those of the acquirer (Berchicci et al., 2009;

[5] We distinguish between relationship strength and the quality of the partner. Partner quality refers to the quality of resources and capabilities that a firm can potentially bring to the collaboration, while relationship strength refers to the quality of the collaboration and the level of relation-specific assets that has developed in the relationship. This distinction reflects two definitions of network or relational resources that have emerged in the literature, i.e., the definition that focuses on resources that are embedded in the relationship, and the alternative that focuses on the resources that partner firms possess and that can potentially be accessed through the relationship (Lavie, 2008).

Capron, 1999). Hence, we argue that the target's ties are at a disadvantage compared to the acquirer's ties, regardless of their strength or value. This may be the result of the acquiring firm's unfamiliarity with the target's resources, its inability to recognize the value that resides in the target, political processes or of the acquirer's overconfidence in its own resources and capabilities (Berchicci et al., 2009; Capron, 1999; Karim, 2006). Regardless of the source of the disadvantage, we expect it to increase the likelihood of dissolution of the target's supplier ties.

Proposition 10: Target ties have a higher likelihood of being terminated following an acquisition than acquirer ties.

The previous propositions were developed from the perspective of the merging company and hinge on the assumption that their partners are willing to continue the relationship after the focal firm has become involved in an acquisition, which is not always the case. The limited body of work that examined the implications of M&As for the firms' exchange relationships illustrated the difficulties associated with the acquisition of IORs. The case study conducted by Anderson et al. (2001), for example, showed that firms often become reluctant to keep their relationships with partners involved in an M&A as they expect them to be less committed, or because one of the parties involved in the acquisition has a negative reputation.

Proposition 11: The likelihood of a firm terminating an IOR will increase when the firm's partner is involved in an acquisition.

Long-Term Effects of M&As on IORs

So far, we focused on the effects of M&As on IORs in the immediate aftermath of the deal, focusing in particular on the reconfiguration of IORs and disruptive effects of M&As. Yet, the stability of the relationships that are maintained after the acquisition, i.e., those that survived the reconfiguration process, may also be jeopardized. Some inter-organizational resources may simply not be redeployable or they may be damaged in the reconfiguration process. The value of IORs largely resides in the relation-specific assets (or skills) - i.e., idiosyncratic interaction routines, which allow partners to communicate and collaborate more effectively - that develop in them (Fichman and Levinthal, 1991; Kotabe et al., 2003; Levinthal and Fichman, 1988). These relation-specific assets are knowledge based and their value is assumed to be hampered if one of the partners is substituted (Kotabe et al., 2003; Wernerfelt, 1985). Yet, we have no knowledge about what happens to these relation-specific assets when one of the partners is involved in an acquisition, and as a result is subjected to major organizational changes. Due to their high context and partner specific nature and the severe changes induced by M&As, relation-specific assets may lose their value over the course of the implementation of the deal. For example, organizational restructuring and individual mobility or turnover could lead to the destruction of individual or organizational attachments and relation-specific assets. These attachments and relation-specific assets largely determine the duration and stability of IORs (Levinthal and Fichman, 1988). After an initial "honeymoon" phase, IORs exhibit a decrease in the likelihood of dissolution over time. Yet, if M&As destroy the attachments and relation-specific assets that drive this duration effect, the likelihood of tie dissolution of the redeployed ties will no longer diminish, and may even increase

again after the M&A. At the organizational level, change disrupts routines and resets the liability-of-newness clock, i.e., it creates the same conditions that make young organizations more likely to fail (Amburgey, Kelly and Barnett, 1993; Hannan and Freeman, 1984, 1989). We expect a similar logic to apply to IORs. In other words, M&As may in essence have the effect of "resetting the clock" of relationships.

Proposition 12: The occurrence of an acquisition will reset the clock of the IORs that are maintained following the acquisition.

The Effect of M&As on IOR Networks

Hitherto we focused on the consequences of M&As for single relationships, yet as we previously argued, in many instances IORs do not operate in isolation from each other and are part of a broader system of collaborations. Hence, M&As are likely to impact the entire system or network of IORs that the target and acquirer were embedded in prior to their combination. Research on the interplay between firms' networks and M&As, is sparse and has so far focused on the effect of networks on M&A related decisions. For example, IORs, in the form of director interlocks, affect firms' acquisition behavior (Haunschild, 1993; Haunschild and Beckman, 1998; Westphal, Seidel and Stewart, 2001). In addition, Beckman and Haunschild (2002) showed that acquisition success and the premium paid are significantly affected by the M&A experience of the firm's network partners. Finally, some recent work suggested that the structural characteristics of the networks in which firms operate also influence firms' acquisition behavior (Lin et al., 2009; Vanhaverbeke, Duysters and Noorderhaven, 2002). In short, only a handful of papers have examined the relationship between IOR networks and acquisitions, thereby

focusing solely on the effect of networks on acquisition behavior and ignoring the possibility that acquisitions trigger network dynamics.

Network change is hampered by the inertial pressures firms face - resulting from internal, network-specific and external constraints - when attempting to change IORs (Kim et al., 2006). M&As have the ability to bring a shock to the system and give firms the opportunity to re-evaluate their IORs. Yet, the limited body of work that has examined network dynamics has focused on environmental triggers of network change, such as major technological developments, changes in regulations, shifts in consumer preferences or the entry of a competitor (e.g., Koka et al., 2006; Madhavan et al., 1998). The possibility that intra-industry M&A activity also causes changes in the industry's competitive landscape, and is therefore likely to be a trigger of change in the structure and the competitive dynamics of the network, has not yet been empirically examined.

Networks consist of direct and indirect competitive and cooperative relations. Yet, previous research has focused predominantly on the cooperative relationships and the benefits firms can accrue through those. The fact that firms may be indirectly linked to rivals through these cooperate relationships has been all but ignored in the literature. Nevertheless, the competitive aspect of networks and these indirect linkages have a significant bearing on alliance formation and partner selection (Gimeno, 2004). More precisely, some firms may try to form alliances with the partners of their rivals to try to achieve the same benefits, while others will try to avoid indirect linkages to competitors to reduce the risk of spillovers or free-riding and instead search for similar partners to try to duplicate the rivals' benefits. Consequently, changes in network structure will alter the

direct and indirect linkages, thereby triggering concerns of knowledge spillovers, leading to relationship dissolution and further changes in the network to restore its balance.

Moreover, M&As affect firms' resource needs which could mean their current partners can no longer provide access to the resources required. Consequently, firms may terminate or replace existing relationships with new ones thereby altering the network in which they operate (Halinen et al., 1999; Madhaven et al., 1998; Hite and Hesterly, 2001).

Proposition 13: M&As affect the structure and competitive dynamics in IOR networks.

CONCLUSION

This paper provided an overview of the literature on the evolution and dissolution of inter-organizational relations in general, and supplier-buyer ties in particular. This overview, while not exhaustive, conveys the basic directions in which research on this issue has progressed to date and the gaps that remain. In the process, we suggested a number of fruitful avenues for future research.

Firstly, future research would benefit greatly from an increased understanding of the interplay between different types of IORs. One interesting issue that has yet to be empirically examined is the potential for experience spillovers between different types of IORs and how these affect relationship stability. We emphasized the need to distinguish between different types of IORs rather than grouping them altogether under the label "alliances" in order to push the IOR and strategy literature forwards.

Secondly, we highlighted organizational and environmental drivers of IOR evolution, both at the dyadic and at the network levels of analysis. Although several

conceptual papers and case studies have identified strategic actions and environmental change as drivers of IOR evolution, empirical research is still lacking in these areas. We focused on the effect of M&As on the evolution and continuation of IORs. We identified two pathways that hold significant promise. One way to push the literature forward would be to examine the disruptive effects of M&As. We discussed several M&A induced changes that stand to disrupt IORs. In addition, we focused on some additional disruptive forces that are particularly relevant for supplier-buyer ties. We suggested that status anxiety will be an important determinant of tie dissolution and that the theory of relative standing can be expanded to the inter-organizational level to understand suppliers' willingness to continue their relationship with a merging buyer. In addition to fears of status loss, changes in the competitive overlap in the suppliers' portfolio as a result of M&As will affect both the supplier and the buyer's willingness to continue their collaboration after the acquisition.

In addition, we argued that IORs can also be viewed as important strategic resources that are subject to reconfiguration. Treating IORs as resources that are subject to reconfiguration opens up an interesting avenue for future research, which will help us gain a more complete understanding of the triggers of IOR change as well as offering additional insights into the wider ranging implications of M&As. Building on the post-M&A resource redeployment literature, we suggested that merging firms will take into account the strength of the ties and the quality of partners when making reconfiguration decisions. However, we also explored the possibility that acquirers do not make completely rational and efficient decisions and in fact are guided by a bias against the target's resources. Yet, when treating IORs as resources subject to reconfiguration it is

still crucial to take into account the disruptions that may stand to affect the other party's willingness to continue the relationship. Hence, the literature can only be advanced by taking a two-sided view of post-M&A tie continuation.

In addition, moving away from the dyadic level of analyses, we suggested that M&As are a source of network change. More precisely, we argued that M&As are likely to affect the structure and the competitive dynamics in the networks of the consolidating firms. In short, examining the effect of M&As on single relationships, as well as on networks of IORs is a fruitful avenue for future research. Although we focused mostly on the effect of specific strategic actions on the evolution and dissolution of IORs, more fine-grained empirical research investigating the effect of environmental changes on IOR and networks is also long overdue.

Our overview of the literature resulted in three additional striking observations that offer interesting opportunities for future research. Most of the research that we reviewed focused on the dynamics and dissolution of alliances or equity joint-ventures. Other types of IORs have enjoyed far less attention in this field. Research on the evolution and dissolution of supplier-buyer ties is relatively scarce. Moreover, the work that does focus on supplier-buyer ties takes a dyadic level of analysis, leaving the network or portfolio level of analysis all but ignored. Secondly, with a few notable exceptions, most of the IOR and supplier-buyer tie research has focused on manufacturing contexts. Yet, the study of supplier-buyer ties in professional service contexts is well warranted. Professional services are a major corporate expenditure and contribute to the achievement of competitive advantage (Baker and Faulkner, 1991). In addition, professional service settings may offer a particularly suitable setting to test

some of the determinants of stability as these relationships do not entail high levels of physical asset specificity, and it is often easier to move out of these relationships, thereby avoiding confounding the effects of the factors under investigation with the effects of specialized investments in physical assets on tie stability. Hence, studies focusing on the relationships between accounting, advertising, banking or consulting firms and their clients could push the literature on supplier-buyer ties further. Finally, the literature has focused on the antecedents rather than on the performance implications of the evolution and dissolution of IORs. We do know that IORs have the potential to contribute to firm performance and IOR dissolution may lead to organizational failure (e.g., Singh and Mitchell, 1996). Yet, we know very little about the performance implications of network evolution or of the reconfiguration of IORs following major strategic events.

Overall, despite the overwhelming body of research that exists on IORs, a number of promising questions remain, offering scholars ample opportunities to make significant contributions to the field.

Appendix 1: Overview of literature on the evolution of IORs

IOR Evolution determinants	Dependent variable	Type of IOR	Level of analysis	Theoretical perspective	Reference
Organizational level					
The rate of change or stability within constellations is determined by whether firms focus on individual or collective advantage. Prior constellation strategies and structures provide positive feedback and reinforce constellation change and stability.	Stability *(conceptual)*	Alliances	Constellations of alliances	Resource based view; network theory	Jones et al. (1998)
Organizational or strategic changes (e.g., acquisitions) trigger adjustments in JV.	Evolution/dissolution *(case study)*	JVs	Dyadic	Evolutionary perspective	Ariño and de la Torre (1998)
Firms' networks shift together with their evolving resource needs when they progress from emergence to early growth.	Network evolution *(conceptual)*	IORs	Network	Network theory, life-cycle approach	Hite and Hesterly (2001)
Changes in the firm's strategy determine contractual renegotiations in alliances, environmental changes have no significant effect.	Likelihood of contractual renegotiation	Alliances	Dyadic	Transaction cost economics	Reuer and Ariño (2002)
Parent firms' alliance experience, the alliance scope, division of labor, and the relevance of the collaboration to the parent determine the likelihood of post-formation governance changes.	Likelihood of governance changes	Alliances	Dyadic	Evolutionary perspective, transaction cost economics, organizational learning	Reuer et al. (2002)
Alliances are characterized by a dialectical interplay of opposing forces (design vs. emergence, cooperation vs. competition, trust vs. vigilance, control vs. autonomy, and expansion vs. contraction) which trigger change.	Alliance evolution *(descriptive case study)*	Alliances	Dyadic	Process theories (life cycle, teleology, evolution, dialectic approaches)	De Rond and Bouchikhi (2004)
Network change is hindered by internal constraints, network tie-specific constraints, network position–specific constraints and external constraints.	Network change *(conceptual)*	IORs	Network	Structural inertia theory (organizational ecology)	Kim et al. (2006)
Vertical alliance intensity negatively affects horizontal alliance intensity (when technological uncertainty is low).	Alliance intensity	Buyer-supplier and supplier-supplier alliances	Dyadic	Organizational learning, resource dependence theory, social exchange theory	Lazzarini et al. (2008)

Appendix 1: Overview of literature on the evolution of IORs *(continued)*

Relational level					
Federations evolve through four stages: (1) emergence of a coalition, (2) transition to a federation, (3) maturity of the federation, (4) critical crossroads. Environmental pressures, motivation to achieve common goals and dependence on federation are critical factors in this evolution.	Change *(conceptual)*	Hospital Federations	Federation	Life-cycle model	D'Aunno and Zuckerman (1987)
Uneven equity shares lead to more contract renegotiations. Restrictions on direct investment and openness of economy determine JV instability (contract renegotiation).	Contract renegotiation	JVs	Dyadic	Bargaining power perspective	Blodgett (1992)
The formation of individual attachments and the development of trust and psychological contracts alter the relationship and substitutes for more formal contractual safeguards. Over time the likelihood of dissolution following a breach in commitment decreases. Excessive formal structuring, conflicts between role and interpersonal behaviors of organizational parties, conditions for violations of trust and escalating commitment to failing transactions lead to relationship dissolution.	Evolution *(conceptual)*	Cooperative IORs	Dyadic	Process theory, transaction cost economics, agency theory	Ring and van de Ven (1994)
Initial conditions determine learning (about task, process, skills, goals and the environment), which in turn leads to readjustment of the partnership.	Evolution *(conceptual)*	Alliances	Dyadic	Evolutionary perspective	Doz (1996)
Cultural differences affect JV longevity.	Longevity	JVs	Dyadic		Barkema and Vermeulen (1997)
Shifts in bargaining power determine instability.	Instability *(conceptual)*	JVs	Dyadic	Bargaining power and dependence perspective	Inkpen and Beamish (1997)
Initial conditions and changes in relationship quality trigger adjustments in JVs.	Evolution/dissolution (case study)	JV	Dyadic	Evolutionary perspective	Ariño and de la Torre (1998)
Internal tensions (competition vs. cooperation; rigidity vs. flexibility; long-term vs. short-term orientation) determine alliance instability	Instability *(conceptual)*	Alliances	Dyadic	Process theory	Das and Teng (2000)
Ties in portfolios are not independent. The strengthening of ties will be accompanied by the weakening of other ties.	Dynamics of IORs *(conceptual)*	IORs	Portfolio	Network theory, dialectic perspective on IORs	Lazzarini and Zenger (2007)
Power imbalance and high levels of conflict increase the likelihood of JV conversion to a wholly owned subsidiary.	Likelihood of conversion to wholly-owned subsidiary	JVs	Dyadic	Social exchange theory, Organizational learning	Steensma et al. (2008)

Appendix 1: Overview of literature on the evolution of IORs *(continued)*

Environmental level					
Outcome and process discrepancies may emerge throughout the course of collaboration. The reactions to these discrepancies determine the developmental path of alliances. The evolution and outcome of alliances are influenced by environmental changes or shifts in the strategies of the partners.	Alliance stability *(conceptual)*	Alliances	Dyadic	Evolutionary/dynamic theory of alliances	Kumar and Nti (1998)
Alliances evolve with the firms' strategies, the institutional, organizational and competitive environment and managerial intent for the alliance.	Evolution *(conceptual)*	Alliance	Dyadic	Co-evolutionary perspective	Koza and Lewin (1998)
Networks evolve in response to environmental changes.	Network structure *(case studies)*	Supplier relations	Network	Resource based view and knowledge based view	Lorenzoni and Lipparini (1999)
Environmental change (in terms of uncertainty and resource munificence) leads to network change (churning, expansion, strengthening, or shrinking). Strategic orientation moderates the relationship between environmental change and network evolution.	Network change *(conceptual)*	IORs	Network	Network theory, evolutionary perspective	Koka et al. (2006)
Alliance portfolio strategy and configurations co-evolve with firm strategy and the environment.	Alliance strategy *(case study)*	Alliances	Portfolio	Contingency theory, co-evolutionary framework	Hoffman (2007)
Market overlap, multi-market contact, prior direct and third-party ties, and power affect the likelihood of withdrawal from alliances.	Member withdrawal	Alliances	Dyadic/network	Embeddedness and resource perspectives	Greve et al. (2010)

Notes:

- Some studies address multiple determinants of IOR evolution, at the relational, organizational and/or environmental level.
- Some studies are more of a descriptive or exploratory nature, or lack a clear theoretical framework, which is reflected in the absence of information in the relevant cells.

Appendix 2: Overview of literature on the dissolution of IORs

IOR dissolution determinants	Dependent variable	Type of IOR	Level of analysis	Theoretical perspective	Reference
Organizational level					
Experience with domestic JVs and international wholly-owned subsidiaries increases the longevity of international JVs.	Longevity	International JVs	Dyadic	Organizational learning	Barkema et al. (1997)
National culture, partner similarity, economic motivation, opportunistic threat and rivalry determine JV dissolution.	Duration	JVs	Dyadic	Transaction cost economics	Park and Ungson (1997)
Prior alliance experience and equity involvement determine alliance duration.	Duration	Alliances	Dyadic	Organizational learning	Pangarkar (2003)
Prior termination experience leads to a lower likelihood of alliance termination.	Dissolution	Alliances	Dyadic	Organizational learning	Pangarkar (2009)
The propensity of alliance termination is influenced by changes in the partner firm's overall strategy and market competition (availability of alternative partners, the occurrence of an M&A, changes in the relatedness between the alliance and the parent firm's business, and competitor's imitative activities).	JV termination	JVs	Dyadic	Evolutionary perspective of the resource-based view	Cui et al. (2010)

Appendix 2: Overview of literature on the dissolution of IORs *(continued)*

Relational level					
Strategic asymmetry between partners (in terms of nationality, size, JV experience etc.) increases the likelihood of termination.	Termination	JV	Dyadic		Harrigan (1988)
The presence of other relationships between the partners has a stabilizing influence on cooperation; R&D intensive ventures are more stable; changes in industry concentration and growth rates increase instability.	Likelihood of JV dissolution	JVs	Dyadic		Kogut (1989)
Joint-ventures between competitors are more likely to be terminated and the likelihood of dissolution peaks in the intermediate term and then drops (reflecting a honeymoon period)	Dissolution	JVs	Dyadic	Transaction cost economics	Park and Russo (1996)
The convergence of partners' capabilities increases the likelihood of JV dissolution.	Longevity	JVs	Dyadic	Transaction cost economics, organizational learning	Nakamura et al., (1996)
Equity ownership determines JV survival.	Mortality rate	JVs	Dyadic	Transaction cost economics	Dhanaraj and Beamish (2004)
Alliance experience and alliance features determine the favorability of research alliances' termination outcomes.	Favorability of termination outcome	Alliances	Dyadic	Transaction cost economics and evolutionary perspective	Reuer and Zollo (2005)
Environmental level					
The initial purpose of formation (resource/labor seeking, market seeking capital seeking or strategic asset seeking), unanticipated contingencies (misleading demand and conflicts with local partners), and initial conditions (cultural distance, IJV size, and international experience) determine the longevity of IJVs.	Longevity	JVs	Dyadic		Makino et al. (2007)
Environmental dependence and formation of other EJVs (affecting partner dependence and substitutability) determine likelihood of termination.	Dissolution	Cross-border equity joint-ventures	Dyadic	Resource Dependence	Xia (2010)

Notes:

- Some studies address multiple determinants of IOR dissolution, at the relational, organizational and/or environmental level.
- Some studies are more of a descriptive or exploratory nature, or lack a clear theoretical framework, which is reflected in the absence of information in the relevant cells.

Appendix 3: Overview of the literature on the evolution of supplier-buyer relations.

SBR Evolution determinants	Dependent variable	Theoretical perspective	Reference
Organizational level			
Relationships evolve through 5 stages: (1) awareness, (2) exploration, (3) expansion, (4) commitment and (5) dissolution.	Relationship evolution *(conceptual)*	Relational view	Dwyer et al. (1987)
International expansion affects the extension and recreation of supplier-buyer ties.	Relationship recreation and relationship extension	Inter-organizational learning and power perspectives	Martin et al. (1995)
Vertical ties constrain horizontal ties (weaken them), but not conversely.	Supplier-buyer tie intensity	Organizational learning, resource dependence theory, social exchange theory	Lazzarini et al. (2008)
Relational level			
Buyers start off supplier relations with relatively simple tasks, and subsequently move on to more ambitious joint or delegated projects involving customized products as the relationship evolves and matures, and as relation-specific skills are developed.	Relation-specific skills *(conceptual and field research)*	Transaction cost economics; relational view	Asanuma (1989)
Inter-firm dependencies are a key determinant of network changes in business groups' supplier-buyer networks. Factors enhancing existing interdependencies stabilize ties, while contingencies that create new interdependencies or attenuate existing ones lead to tie formation and dissolution, respectively. Unrelated diversification increases tie dissolution and tie formation in intra-group networks.	Tie formation and tie dissolution	Network theory, resource dependence	Li et al. (2010)

Notes:

- Some studies address multiple determinants of supplier-buyer tie evolution, at the relational, organizational and/or environmental level.
- Some studies are more of a descriptive or exploratory nature, or lack a clear theoretical framework, which is reflected in the absence of information in the relevant cells.

Appendix 4: Overview of the literature on the dissolution of supplier-buyer relations.

SBR dissolution determinants	Dependent variable	Theoretical perspective	Reference
Organizational level			
The mobility of managers, both on the supplier and buyer side, affects the likelihood of tie dissolution.	Tie dissolution	Social embeddedness perspective	Broschak (2004)
An increase in competitive overlap as a result of a supplier-level M&A affect the likelihood of supplier-buyer tie dissolution, the effect is intensified by the level of embeddedness.	Tie dissolution	Exchange theory	Rogan (2008)
Relational level			
Hazard rate of tie dissolution is a function of prior duration and complexity of tasks. In the initial years, the likelihood of dissolution increases (honeymoon period), then it decreases. The complexity of the task has a negative effect on the hazard rate.	Tie duration	Social exchange theory	Levinthal and Fichman (1988)
The development of structural and individual attachments attenuates the positive effect of changes in resource needs on the likelihood of tie dissolution.	Tie dissolution	Social exchange theory, resource dependence theory	Seabright et al. (1992)
Status anxiety (i.e., concerns about being devalued because other actors question the quality of a firm's partners) leads to tie dissolution.	Tie dissolution	Accountability perspective on status (roots in social comparison and reference group theory)	Jensen (2006)
Environmental level			
Institutional forces reduce the likelihood of tie dissolution; powerful suppliers lead to more stable ties, while powerful clients create more instability; competition increases the likelihood of dissolution.	Tie dissolution	Institutional theory, resource dependence, social exchange theory, network theory	Baker et al. (1998)

Notes:

- Some studies address multiple determinants of IOR evolution, at the relational, organizational and/or environmental level.
- Some studies are more of a descriptive or exploratory nature, or lack a clear theoretical framework, which is reflected in the absence of information in the relevant cells.

Chapter 3[1]

THE EFFECTS OF CORPORATE DEVELOPMENT ACTIVITIES ON SUPPLIER-BUYER TIES

ABSTRACT

We examine how a buyer firm's experience with external corporate development activities - i.e., alliances, equity joint-ventures and acquisitions - differentially affects the stability of its supplier ties. We argue that corporate development activities provide opportunities for learning resulting from experience spillovers, but that the effects of different types of experience are not uniform and vary on specific dimensions of the experience's applicability. We distinguish between two types of similarity that stand to affect spillovers: (1) similarity in terms of the mode of governance, i.e., "modal similarity"; and (2) "directional similarity" which captures the distinction between vertical and horizontal activities. We find support for the hypothesized differentiated relationships between CDA experience and the stability of supplier-buyer ties in a sample of 381 advertising agency-client ties. Our results show that not all types of CDA experience matter in the same way. Alliance and equity joint-venture experience impact supplier-buyer ties, albeit to varying degrees, while M&A experience does not have a significant effect. This has implications for a generalized theory of the evolution of inter-organizational relationships.

[1] This chapter is the result of joint work with Xavier Martin. Earlier versions of this chapter, under a different working title, appeared in the *Best Papers Proceedings of the Academy of Management*, the *Proceedings of the Annual Conference of the Administrative Sciences Association of Canada* and received the *Strategic Management Society Best Conference PhD Paper Prize* in 2008.

INTRODUCTION

Researchers have long argued that inter-organizational relations (IORs) have the potential to create value by offering the parties involved access to valuable resources and capabilities (Kale, Singh and Perlmutter, 2000; Sampson, 2007). Given the importance of IORs for firms, it is imperative to understand why and how firms form, maintain and terminate relationships. The drivers of IOR formation and their consequences for firm performance have been studied extensively (e.g., Ahuja, 2000a, 2000b; Anand and Khanna, 2000; Oliver, 1990). Yet, less is known about the dynamics of these relationships and the causes of relationship termination. Research in this area has shown that as a relationship continues over time, the parties involved develop relation-specific assets (or skills) - i.e., idiosyncratic interaction routines, which allow them to communicate and collaborate more effectively - which in turn strengthen the relationships (Fichman and Levinthal, 1991; Kotabe, Martin and Domoto, 2003; Levinthal and Fichman, 1988). Hence, the development of these relation-specific assets acts as a stabilizing force to the relationship, thereby increasing its duration. In early research, relationship termination was often treated as the inverse of relationship formation (Seabright et al., 1992). This view suggests that firms establish IORs to overcome a resource need, and once this need or the ability of the other party to fulfill this need changes, the relationship will be terminated.

More recently, Baker et al. (1998) argued that the termination of IORs is a function of the effects of competition, power and institutional forces. In addition, Broschak (2004) showed that managers' mobility increases the likelihood of tie dissolution. Despite the valuable insights that have emerged from this work, relatively little is known on how a firm's strategic actions affect the stability of its IORs, and particularly its relationships with suppliers. However, there is evidence suggesting that major strategic actions, such as

corporate expansion events affect supplier-buyer ties in the automotive industry (Martin, Mitchell and Swaminathan, 1995). We extend this work by examining how firms' external corporate development activities (CDA) – which are considered to be important strategic actions - affect the stability of their relationships with suppliers.[2] By focusing on those corporate development activities that entail at least some degree of inter-organizational collaboration, i.e., alliances, equity joint-ventures (EJVs) and acquisitions, we also shed light on the interplay between different types of IORs and on the co-evolution of IORs with firms' strategies (Koza and Lewin, 1998). Recent research has highlighted the need to understand how different IORs interact. Lazzarini, Claro and Mesquita (2008) examined how jointly occurring horizontal and vertical alliances reinforce or undermine one another. In this paper we go beyond the examination of the interplay between different types of concurrent alliances, by examining an array of corporate development activities, including both IORs and M&As, and their subsequent impact on supplier-buyer ties.

Intuitively, we would expect that corporate development activities cause disruptions, and subsequently destabilize supplier ties, as they are often associated with organizational or strategic change, as well as potential individual mobility (Barkema and Schijven, 2008; Das and Teng, 2002; Haspeslagh and Jemison, 1991; Paruchiri, Nerkar and Hambrick, 2006; Walsh 1988). However, in this paper we argue that external corporate development activities - which entail collaboration across organizational boundaries - in

[2] Firms pursue corporate development activities to expand or reshape their business. They can do this through alliances, equity joint-ventures, greenfield investments, restructuring or divestments. In this paper we focus on external corporate development activities that entail at least some cooperation across organizational boundaries, i.e., alliances, EJVs and M&As. It should be noted that the level of inter-organizational cooperation differs across these activities. For example, in M&As inter-organizational cooperation ceases as soon as the deal is closed and the two companies become one or the acquired unit becomes part of the acquiring organization.

fact offer opportunities for the development of relational routines, which can guide firms in other forms of inter-organizational collaboration as well.

Drawing on the literature on experiential learning, we argue that as firms accumulate experience with corporate development activities their supplier ties become more stable as they learn how to collaborate. Ample research has examined the effect of prior experience on the outcome of different types of IORs (e.g., Anand and Khanna, 2000; Barkema et al., 1997; Sampson, 2005). Yet, this work has consistently looked at intra-activity learning, i.e., the effect of experience with a specific activity on the outcome of activities of the same kind. Recently, scholars have started to challenge the assumption of separable learning processes that underlies much of the experiential learning literature, by arguing that activities are not learned in a vacuum, and therefore, the experience gained in one type of activity influences other activities, provided that there is sufficient similarity between them (Nadolska and Barkema, 2007; Zollo and Reuer, 2009). In this paper we seek to further advance this literature by studying how a firm's experience with corporate development activities influences the continuation and stability of its supplier ties. By focusing on the effect of CDA experience on supplier-buyer tie stability we provide additional insights into the dynamics and termination of IORs, and supplier-buyer ties in particular. In addition, this paper adds to the literature on experiential learning by showing that experience in one area can significantly affect other activities, and thereby challenging the implicit assumption that prevails in much of the traditional learning theory that suggests that experiential learning occurs in isolation.

We test our hypotheses on a sample of 381 advertising agency-client relations started in 1995 and tracked over a 12-year period. Prior to our study we conducted a number of interviews with agency executives in Europe and the U.S. to gain insights into

the industry and into factors that may potentially drive relationship stability and dissolution. From these interviews and from advertising industry publications it became apparent that client firms face considerable switching costs in the event of a replacement of an incumbent agency. In fact, it has been estimated that the search for a new agency costs clients $1,500 daily for every million dollars of ad budget (Agency Finder, 2009). For a relatively short 60-day agency search for a client with a $25 million advertising budget these cost would add up to more than $2 million, not taking into account the loss of marketing momentum or market share that may result from the search. Despite these significant switching costs, client firms differ considerably in the way they handle their relationships with ad agencies, or suppliers in general. In this paper we shed light on one of the origins of these differences and on the drivers of relationship stability.

THEORY

Learning Opportunities Arising from CDA

Several studies have shown that firms can learn from their experiences and subsequently, improve performance in specific tasks (e.g., Anand and Khanna, 2000; Baum and Ingram, 1998; Darr, Argote, and Epple, 1995; Sampson, 2005). The sheer complexity associated with corporate development activities, and the high failure rates associated with some of these activities, have fuelled the discussion on the importance of experiential learning processes in this context. For example, in the context of M&As, experience contributes to future acquisition performance (e.g., Fowler and Schmidt, 1989), even though these benefits may only start to materialize when a firm becomes very experienced or when the knowledge gained through experience is codified (Haleblian and Finkelstein, 1999; Zollo and Singh, 2004).

The link between the potential development of an "alliance capability", through the accumulation of alliance experience, and alliance success has also been extensively discussed (e.g., Anand and Khanna, 2000; Kale and Singh, 2007). More precisely, Anand and Khanna (2000) asserted that learning is particularly important in the context of inter-organizational relations as it entails an improvement in a firm's ability to anticipate and react to contingencies that cannot be specified ex ante in a formal contract. Their results showed that experience is beneficial for some types of joint-ventures, but not for licensing agreements. Similarly, Sampson (2005) argued that organizations can coordinate and interact more effectively and efficiently with their partners, which in turn improves collaborative benefits, if they develop alliance management skills through experience. In a similar vein, several others have suggested that firms develop a "relational capability" or a "collaborative capability" through experience, which improves their ability to identify suitable potential partners, choose an optimal governance structure, negotiate the form of the collaboration, manage and monitor the venture, internalize or transfer specialized knowledge, and determine when to terminate the collaboration (Lorenzoni and Lipparini, 1999; Reuer et al., 2002; Simonin, 1997).

However, not all types of experience have proven to be beneficial for future performance (e.g., Anand and Khanna, 2000; Reuer et al., 2002; Sampson, 2005), suggesting that relatively little is known about the development of collaborative capabilities, or even about their mere existence in certain contexts. As a result, several scholars have started to examine additional sources of learning and capability development, such as the experience of others and vicarious learning mechanisms (e.g., Baum, Li and Usher, 2000; Beckman and Haunschild, 2002). Yet, experience that is potentially much more accessible and useful, i.e., experience with other tasks performed by

the firm, is often ignored as a potential source of valuable knowledge and learning. In other words, most of the literature has overlooked the possibility that firms may benefit from inter-activity learning, i.e., where they learn how to successfully perform an activity by gaining experience with other related activities.

This emphasis on intra-activity learning mechanisms in much of the literature stems from the underlying assumption that firms learn by encoding inferences from their experiences into routines, which in turn are generally deemed to be a source of inertia and inflexibility and highly context specific (e.g., Gersick and Hackman, 1990; Hannan and Freeman, 1984). These routines guide future behavior and lead to the development of organizational capabilities (Levitt and March, 1988; Nelson and Winter, 1982). Consequently, much research has focused on the potential of capability development through intra-activity learning mechanisms.

Nonetheless, more recent work has emphasized the potential of routines as a source of organizational learning and change, with potential applications across rather than within activities. A starting point is the distinction between the ostensive and performative aspects of routines, i.e., between the structure and the enactment of the routines, respectively (Feldman, 2000; Feldman and Pentland, 2003). It is the performative aspect of routines that leads to change as it creates, maintains and modifies the ostensive dimension of the routine to accommodate for changing contexts or unexpected circumstances (Feldman and Pentland, 2003). Based on this more dynamic view of routines, we argue that the enactment of routines pertaining to inter-organizational collaborations will lead to the adjustment of their ostensive parts when necessary to ensure their applicability to future collaborations, even if these collaborations are of a different form. We postulate that external corporate development activities, which entail at least some degree of inter-

organizational collaboration, lead to the development of specific relational or collaborative routines, which can then be applied to other forms of collaboration. In light of this, we examine how experience with different types of corporate development activities affects future behavior in related activities.

Kotabe et al. (2003: 312) argued that the collaborative mechanisms that arise in long-term supplier-buyer ties, i.e., the relational assets, are not unique to vertical inter-organizational relations and that they are also of relevance inside firms that integrate vertically or diversify through acquisitions, or in horizontal inter-organizational relations. In all of these situations knowledge transfer and sharing is important to generate additional returns among the parties. Having the appropriate routines and capabilities in place is therefore critical. In fact, Dyer and Singh (1998) posited that the development of superior inter-organizational knowledge-sharing routines is crucial to generate relational rents from collaboration. However, achieving successful inter-organizational collaboration requires more than the development of knowledge-sharing routines, as firms also need to have sufficient skills to select suitable partners, decide on the mode of collaboration, and subsequently coordinate, manage and evaluate the collaborative activities and communicate and bond with partners (Gulati, 1998; Schreiner, Kale and Corsten, 2009). By gaining experience with the different facets of the inter-organizational collaboration process firms develop a variety of routines - which we label as *relational routines* - that will guide future behavior (Levitt and March, 1988). These relational routines aid firms in selecting and negotiating with potential partners, organizing the form of collaboration and planning, evaluating and adjusting the collaboration (Day, 1995; Lambe, Spekman and Hunt, 2000). Moreover, these relational routines will help firms learn and achieve the

benefits of collaboration faster in future collaborations than firms who have not developed these routines through experience (Lambe et al., 2000).

We argue that as these relational routines accumulate and are refined through experience, a *collaborative capability* will start to develop. However, the development of this capability is not solely dependent on the accumulation of routines but also on cognitive factors (Gavetti, 2005). More precisely, we argue that the ability of key individuals to draw inferences from different types of experience will also aid in the development of this collaborative capability. Gavetti, Levinthal and Rivkin (2005) argued that analogical reasoning, based on direct or vicarious experience, allows managers to transfer knowledge from one setting to another. Hence, experience with different activities allows managers to draw analogies between activities and apply what they have learned to different contexts.

Despite the fact that the notion of analogical reasoning has enjoyed relatively little attention in the organization and strategy research, the field of psychology has extensively studied its effects (Cormier and Hagman, 1987; Gick and Holyoak, 1987; Gick and McGarry, 1992). More precisely, transfer theory showed that decision makers leverage knowledge gained in one task when performing a subsequent task, and consequently improve task performance, provided that the tasks exhibit sufficient similarities. For example, Singley and Anderson (1989) showed that individuals who used one programming language exhibited positive transfers of what they learned when subsequently using another language. Similarly, Loewenstein et al. (1999) showed that students transfer knowledge from one decision scenario to another, and this transfer is stronger when they were initially confronted with two different but similarly structured scenarios. Schilling et al. (2003) extended this view to the group level and showed that

groups with experience with different types of strategic problem-solving tasks outperform groups that only have experience with the focal task.

Recently, organization and strategy scholars have drawn on this theory to examine potential transfer effects at the organizational level. In particular, Finkelstein and Haleblian (2002) examined the transfer effects between first and second acquisitions. Both the early work in psychology and Finkelstein and Haleblian's (2002) work focused on transfer effects between two specific tasks, but largely failed to take expertise in those tasks resulting from prior experience into account (Novick, 1988; Singley and Anderson, 1989). As a result, more recent work has tried to fill this void by looking at transfer effects from experience with one activity to a related activity.

Zollo and Reuer (2009) showed that under certain conditions alliance experience spills over to acquisition performance. In a similar vein, Nadolska and Barkema (2007) showed that international acquirers can benefit from international M&A experience, international JV experience and domestic M&A experience, provided that they have gained sufficient experience to determine which routines are applicable to the focal type of deal and thereby avoid incorrect inference making.

Others did not necessarily explicitly address the possibility of inter-activity experience spillovers, but have implicitly assumed that firms learn how to improve performance of a specific activity by gaining experience with other, related activities. For example, Kale et al. (2002) distinguish between the effect of experience on alliances and on EJVs, yet their experience measure contains both types of collaborations. Hence, they implicitly assume that the experience developed through one activity is also of use in the other activity.

This notion that firms can improve performance in one corporate development activity by gaining experience with another type of activity, is grounded in the fact that firms are confronted with similar challenges in the different activities. Schreiner et al. (2009) argued that firms possess an alliance capability - which positively impacts their alliance outcomes - when they have distinct skills to manage coordination, communication and bonding needs in alliances. These skills are akin to those required in other forms of external corporate development activities. For example, alliances, EJVs, and M&As all require firms to manage and coordinate activities across organizational boundaries, design and negotiate appropriate contracts, evaluate performance and manage cultural differences. Sampson (2005) argued that firms learn how to deal with such complexities by gaining experience with any type of alliance, and subsequently use the skills they developed in the context of other alliances as well.

To summarize, experience spillover effects exist across various corporate development activities (Meschi and Metais, 2006; Wang and Zajac, 2007; Zollo and Reuer, 2009), but the literature to date has left out the possibility that these spillover effects extend beyond corporate development activities. We believe that experience with CDA spills over to other activities. As firms accumulate experience with corporate development activities they develop a collaborative capability, through the accumulation of relational routines and by drawing analogies between different activities. This capability, in turn, facilitates the collaboration with suppliers and results in closer and more stable relations as firms face many challenges in supplier-buyer relations akin to those faced in other forms of inter-organizational collaboration, including those aimed at corporate development. As a result of the increased stability resulting from positive experience spillovers, we expect the likelihood of tie dissolution to decrease. For prediction purposes, the more critical nexus of

such spillovers is the buyer, which can dissolve the relationship at any time. We hypothesize:

> *Hypothesis 1: A buyer firm's corporate development experience will have a negative effect on the likelihood of dissolution of its supplier-buyer ties in a given year.*

The Role of Similarity

So far we have focused on experience with a variety of corporate development activities, without distinguishing between specific activities. However, some types of activities will have a more pronounced effect on the continuation of supplier-buyer ties than others. M&As, alliances and EJVs lead to the development of different routines or different degrees of routines, which are therefore more or less transferrable to supplier-buyer ties. Consequently, we expect the direction of the effect of experience on tie dissolution to be uniform but effect magnitudes to differ for different types of activities.

According to transfer theory, the occurrence, direction and magnitude of spillovers will largely be determined by the similarities or cognitive distance between the activities (Cormier and Hagman, 1987; Gick and Holyoak, 1987). More specifically, Zollo and Reuer (2009) contended that alliance experience spills over to acquisition performance, albeit as a function of the cognitive distance between these two activities, which in turn is dependent upon the level of integration and the relational quality between the organizations involved. Similarly, Meschi and Metais (2006) argued that in an acquisition the acquirer can in fact leverage the skills and knowledge it developed in other activities, such as in joint-ventures. Yet, the knowledge and skills obtained through acquisitions tend to be mostly conducive for future acquisitions and do not affect the likelihood of the firm

pursuing alliances in the future, while the knowledge and skills resulting from alliances will be beneficial for future deals of both types and will in fact increase the likelihood of a firm engaging in future acquisitions (Villalonga and McGahan, 2005; Wang and Zajac, 2007). Acquisition experience thus seemed to be associated with less fungible knowledge and skills.

Together, this work suggests that in some cases experience spillovers exist between different types of corporate development activities, but they do not occur symmetrically or between all modes. Our arguments are consistent with this view, and we extend it to spillover effects from alliances, EJVs, and M&As to supplier-buyer relations. Given that the operational and cognitive distance between these activities varies, we expect differences in the magnitude of these spillover effects. We distinguish between two types of similarity that stand to affect spillovers: (1) similarity in terms of the mode of governance, which we label "modal similarity"; and (2) "directional similarity" which captures the distinction between vertical and horizontal activities.

Modal Similarity

First we focus on modal similarity and compare three types of CDA (i.e., M&As, EJVs and alliances) to supplier-buyer ties. These three modes all entail the combination or collaboration of two or more organizations. However, one difference lies in the way these organizations are brought together. Alliances and joint-ventures involve voluntary cooperation while acquisitions are either friendly or hostile and often lead to conflict and resistance to change and cooperation. Furthermore, acquisitions entail one party (the target) relinquishing control thoroughly and permanently to the other (the acquirer), and thereby terminating the inter-organizational collaboration early on. In alliances and EJVs,

on the other hand, inter-organizational interactions are ongoing until the end of the partnership. The partners maintain their autonomy and identity, as is the case in supplier-buyer ties. The operation of alliances and EJVs is also more likely to be of a democratic nature and intended for a shorter period of time than that of M&As (Wang and Zajac, 2007).

Hence, compared to M&As, alliances and EJVs exhibit a higher modal similarity to supplier-buyer ties. These similarities will translate into stronger positive spillovers, and therefore a lower likelihood of tie dissolution. We expect the spillovers from alliances and EJVs to be substantial, while we only anticipate minor spillovers from M&As. In keeping with this logic, we anticipate that the risks of supplier-buyer tie dissolution will be reduced by alliance and EJV experience more than by M&A experience:

> *Hypothesis 2: The negative effect of a buyer's alliance/EJV experience on the likelihood of supplier-buyer tie dissolution will be stronger than that of its M&A experience.*

Up to this point, we have treated alliances and EJVs as rather similar, and consequently, leading to a similar relationship with the likelihood of supplier-buyer tie dissolution. Nevertheless, some substantial differences between alliances and EJVs exist. Alliances entail the interaction between partners who do not become part of the same entity, nor do they jointly set up a legally separate venture. Equity joint-ventures achieve their cooperative purpose by creating a new entity, which requires equity contributions as well as commitment of resources and employees to make the new venture work (Martin and Salomon, 2003). EJVs generally entail higher employee mobility between the parents and the venture (Colombo, 2003; Sampson, 2007). Alliances, on the other hand, are more

flexible and easier to adjust (Colombo, 2003). In this sense, alliances are more similar to supplier-buyer ties than EJVs in terms of modal similarity. It follows that the potential for spillovers from alliance experience is higher than that of EJV experience, resulting in a stronger decrease in the likelihood of tie dissolution for alliances than for EJVs. We hypothesize:

> *Hypothesis 3: Ceteris paribus, the negative effect of a buyer's alliance experience on the likelihood of supplier-buyer tie dissolution will be stronger than that of its EJV experience.*

Directional Similarity

So far we restricted our discussion to the role of modal similarity in experience spillovers without considering the intended goals and the tasks to be performed. Focusing merely on the way collaborations are organized only provides a limited account of the spillover potential from corporate development experience. We now turn to a different form of similarity: directional similarity, which pertains to the goals and tasks of collaborations. Antecedents and requirements of cooperation differ considerably between vertical and horizontal forms of collaboration. These differences will be pertinent as long as the firms continue to operate as independent firms. This is not the case in acquisitions as interactions occur under the same ownership and via managerial authority once the deal is closed (Wang and Zajac, 2007); once interactions become internalized, inter-organizational collaboration ceases and many of the issues we will outline below no longer exist. Hence, we focus our discussion on the differences between horizontal and vertical collaborations - and the effect of directional similarity on experience spillovers - in alliances and EJVs.

Horizontal collaborations, by definition, entail the collaboration of competitors. As a result, there is more room for - and potential damage from - opportunism in horizontal collaborations (Krishnan, Martin and Noorderhaven, 2006). Due to the potentially conflicting goals of the partners, the likelihood of failure is also considerably higher in horizontal collaborations (Park and Russo, 1996). Compared to vertical relations, horizontal relations exhibit a lower degree of reciprocity and closeness among participants (McEvily and Zaheer, 1999; Rindfleisch and Moorman, 2001). At the same time, they manifest greater knowledge redundancy due to their structural equivalence (Rindfleisch and Moorman, 2001).

In short, horizontal and vertical collaborations require similar capabilities, but also come with different challenges in terms of achieving cooperation and the intended goals of the collaboration. Given that supplier-buyer ties are of a vertical nature, vertical alliances and EJVs are more directionally similar to these ties than their horizontal counterparts. Yet they are distinctly different from supplier-buyer ties, since the latter are market-type procurement relationships which typically rely on competitive bidding.[3] Moreover, vertical alliances and supplier-buyer ties are generally accompanied by different contracts, in terms of payment terms and incentives, administrative structure, and dispute resolution (Mayer and Teece, 2008).

Despite these differences, firms face tasks and challenges in vertical corporate development activities similar to those encountered in less formalized relationships with suppliers, for example, in terms of information sharing, joint-problem solving, communicating, negotiating and achieving coordination. Through CDA firms become

[3] In our context, as further discussed below, advertising agency-client ties clearly fall in the latter category as they are essentially market relationships and entail agencies pitching for the same account (Baker et al., 1998).

proficient in the coordination of vertical partnerships along the value chain, which in turn helps them lower production costs (Mesquita and Lazzarini, 2008). Accordingly, we expect firms to develop vertical collaboration skills through vertical CDA that can subsequently be applied to supplier-buyer ties, given the underlying similarities between these activities. Consequently, we contend that vertical CDA experience is more readily transferable to supplier-buyer ties than experience with horizontal corporate development activities.

Hypothesis 4a: Ceteris paribus, the negative effect of a buyer's vertical alliance experience on the likelihood of supplier-buyer tie dissolution will be stronger than that of its horizontal alliance experience.

Hypothesis 4b: Ceteris paribus, the negative effect of a buyer's vertical EJV experience on the likelihood of supplier-buyer tie dissolution will be stronger than that of its horizontal EJV experience.

The Mitigating Effect of Directional Similarity

We expect that the degree of learning that will take place, and consequently also the spillover effects to other activities that arise through directional similarity, varies by type of vertical CDA. The mode of collaboration will play an important role in this as the level of commitment, the degree of learning and the duration and the intensity of collaboration differ considerably between alliances and EJVs. Hence, the form of collaboration has the potential to enhance or attenuate the degree of learning pertaining to vertical tasks that occurs.

In EJVs, the presence of equity is aimed at aligning the interests of the partners, which in turn will result in much closer interaction among them (Kale et al., 2000).

Moreover, EJVs facilitate knowledge sharing because they generally entail exclusive assignment of some employees to the venture, formal joint management and more efficient routine development than alliances (Sampson, 2007). Alliances are also more prone to opportunistic behavior, limiting the incentive for knowledge sharing. Hence, as Anand and Khanna (2000) argued, EJVs provide more opportunities for learning. EJVs entail high set-up and dissolution costs, which motivates a continuity of collaboration (Harrigan, 1988; Pangarkar, 2003; Santoro and McGill, 2005). Consequently, they allow for a more thorough understanding of the specific tasks and challenges inherent to vertical collaborations, and for the development of more widely applicable relational routines.

In our earlier discussion of the effect of modal similarity, ignoring the directional similarity just discussed, we concluded in Hypothesis 3 that, ceteris paribus, alliance experience allows for greater spillovers than EJVs due to modal similarity to supplier ties alone. However, the discussion of directional similarity shows that EJVs allow for a larger scope of inter-organizational learning from vertical interactions. It remains to combine these ideas. We expect that modal similarity still plays a role in the vertical CDA context, but given directional similarity the relationship in Hypothesis 3 becomes contingent. More precisely, in vertical CDAs, the lower level of modal similarity in EJVs is compensated by the higher level of learning about vertical collaboration resulting from their higher collaborative intensity and commitment. Therefore, we expect the relationship to be weakened in the presence of directional similarity. We hypothesize:

> *Hypothesis 5: While we expect the negative effect of alliance experience on tie dissolution to be stronger than that of EJV experience, ceteris paribus, we expect this difference to be smaller in the case of vertical collaborations.*

METHODS

Data and Sample

In order to test our hypotheses we study the dissolution of relationships between advertising agencies (suppliers) and their clients (buyers). This context is particularly attractive to study the effect of CDA experience on tie dissolution. Firstly, advertising is of great importance to the firms that buy advertising agencies' services - especially in the industries we focus on in our study, as described below - as it constitutes a major operating expense and affects the demand and potential success of products or services. In fact, decisions pertaining to advertising and to changes in agency relations even affect the value of the firm, as the onset of a new agency-client relationship leads to negative stock market reactions (Mathur and Mathur, 1996). Thus advertising ties are of substantial importance to clients. Secondly, agency-client relationships exhibit substantial variation in their duration. Thirdly, advertising agency-client relations are of a legally open-ended nature, and usually entail no more than a 90-day notice for cancellation (Horsky, 2006). Hence, the observation of tie dissolution is not complicated by contractual details or delayed by pre-specified terms that could lead to the continuation of the relationship on paper even when actual collaboration has ended. Finally, the setting allows us to distinguish between vertical alliances and the focal supplier-buyer ties, a distinction which can be more complex in other contexts. The former are characterized by longer-term, open-ended contracts that are formalized and announced as alliances. The latter, on the other hand, are market-like procurement relationships which rely on competitive bidding (i.e., in this context several agencies pitching for the same account). There is thus a clear distinction between vertical alliances, which entail other partners than advertising agencies or their clients, and agency-client relationships with constitute a homogeneous category of

supplier-buyer ties. Formal vertical alliances between agencies and clients are extremely rare, and we do not observe any in our sample.

Our unit of analysis is the client-agency tie in a given year. Data on client-agency ties were obtained from *The Standard Directory of Advertising Agencies* and *The Standard Directory of Advertisers*, also known in the industry as *The Red Books.* This directory provides a comprehensive listing of U.S. advertising agencies and their clients and has been published on an annual basis for the past 80 years. It contains detailed information on advertising agencies and on advertisers, including account information, specialization of the agency, core business of the advertisers, contact information on key agency personnel, ownership details, and the number of employees. These data have been used successfully in several past studies (e.g., Baker et al., 1998; Broschak, 2004). To obtain a sample of agency-client ties, we selected all client companies active in the pharmaceutical industry, financial service sector, tobacco industry, cosmetics, retail trade (including department stores, grocery stores, restaurants etc.), and food and kindred products from the 1995 Red Book volume and identified all of their agency relationships. These industries are advertising-intensive[4] enough that agency-client ties are of substantive interest, and have enough companies (clients) in them that we can observe variance among firms (and implement industry effects to control for differences among sectors). Subsequently we verified which of these ties did not exist in previous years, and hence could be considered to be new ties. We selected 1995 as a start year to ensure that we could track relationships for a sufficiently long time, thereby limiting the number of right-censored observations.[5] By restricting our sample to newly created ties in 1995 we avoid any problems that may

[4] These industries are all in the top 20 in the ranking of industry advertising expenditure published by *Ad $ Summary* in 1994, and five of them rank in the top 10.

[5] Selecting an earlier starting year would preclude the observation of a sufficiently large experience window for firms' CDA experience as explained below.

emerge from left-censoring. We ended up with 381 ties that started in 1995, which we tracked until 2006 or until they dissolved or disappeared from the Red Books, whichever came first.

Information on the clients' CDA experience was derived from the Thomson Financial Security Data Corporation (SDC) database. A number of additional sources, such as Thomson Financial Datastream database, Compustat, SEC 10K filings, company annual reports and company websites were also used to obtain the necessary control variables.

Dependent variable

Our dependent variable is dichotomous and takes on the value 1 if a tie ends in a given year, and 0 otherwise.

Independent variables

For every client firm we developed a measure of *cumulative CDA experience* – i.e., the combined experience with alliances, EJVs and M&As - from 1988 until the focal year.[6] We constructed similar measures for *M&A experience, alliance/EJV experience, alliance experience, EJV experience, horizontal M&A experience, vertical M&A experience, horizontal alliance experience, vertical alliance experience, horizontal EJV experience,* and *vertical EJV experience.*[7] Consistent with previous research, collaborations involving partners operating in the same three-digit SIC code were coded as horizontal activities (e.g., Chan et al., 1997). We use the input-output tables published by the Survey of Current

[6]The SDC database includes some data on alliances prior to 1988, but it is very sparse. The database manual indicates that reliable data on alliances is available in SDC from 1988 onwards. We use alternative experience windows in the robustness checks to deal with any potential concerns about the completeness of the data prior to 1990 (e.g., Anand and Khanna, 2000; Schilling, 2009), and to deal with the potential decay of learning from experience over time.

[7] Not only do vertical alliances differ conceptually from supplier-buyer ties, as explained earlier, empirically they are also distinct. The SDC alliance/JV database relies on alliance announcements in a variety of news sources. However, advertising agencies or clients do not announce their collaboration as an alliance, but rather as a market type of relationship. More precisely, agencies announce which accounts they have won and clients announce which agencies they decided to use following an account review.

Business and the OECD to determine whether an acquisition, alliance or EJV had a vertical scope. An activity was coded as vertical when the industry of one party sold more than 5 percent of its output to, or received more than 5 percent of its inputs from, the industry of the other party (Haleblian and Finkelstein, 1999; Haunschild, 1993).

Control variables

In addition, we include a number of relationship, client and agency level control variables. The *duration* of a client-agency tie reflects the number of consecutive years the agency has worked with the client since the tie started in 1995. We approximate the *client firm's size* by the number of people employed in the firm. In addition, we measure the *change in sales* between the focal year and the previous year for a client and use it as a proxy for agency effectiveness. We control for the *number of agencies* a client has, as a higher number of agency ties increases the complexity and costs of managing ties, which could increase the likelihood of tie dissolution (Broschak, 2004). Moreover, clients with only one agency may become increasingly dependent on that agency, making it harder to end the tie. In addition, we control for a client's history of ending ties by including the *number of tie dissolutions* in the past three years as this is likely to affect the likelihood of dissolution of the focal tie (Broschak, 2004; Kim et al., 2006). We also control for *client age,* as firm age is often associated with inertia, which in turn could reduce the likelihood of tie dissolution (Hannan and Freeman, 1984; Miller and Chen, 1994). Industries differ in their level of advertising intensity and in the level of CDA taking place. Hence, we control for the client's primary industry based on 2-digit SIC codes. In addition, we control for *the number of industries* (at the 2-digit level) a client operates in, as highly diversified clients may require more agencies to deal with their complex needs. We include a dichotomous control variable to indicate whether a tie is with an *in-house agency* (coded 1) or not (0).

As a way to control for alternative causes of tie dissolution, we also included a dummy variable, *agency acquisition,* to indicate whether or not the agency of the focal tie had been involved in a merger or acquisition in the previous year. In addition, we control for the *number of accounts* the focal agency has. Agencies with few accounts are more dependent on each individual client than agencies with a high number of clients, and hence, may be more willing to do whatever it takes to keep an account. A high number of accounts may lead to dispersion of the agency's attention and efforts due to the complexity and costs associated with managing high numbers of ties (Broschak, 2004). We also control for the *number of accounts* an agency has *lost* or terminated in the three years preceding the focal year. Finally, we also control for *agency CDA experience,* as agency-client ties may also benefit from CDA experience on the agency side.

Analysis

Given the nature of our data, we rely on event history analysis techniques to test our hypotheses regarding the probability that an agency-client tie ends, i.e., an event will occur, at a particular time. Although a tie can end at any given point in a year, our data only allows us to observe tie dissolution on a yearly basis. As a result, the events in our sample take place within discrete time intervals. If these intervals are sufficiently small, it is acceptable to treat them as continuous and apply continuous-time methods for event history analysis such as the Cox model (Allison, 1984). Yet, in our case the time units are large, i.e., years. In addition, the presence of tied data, i.e., events happening at the same time may bias the results of a continuous time model (Yamaguchi, 1991). Therefore it is more suitable to employ discrete-time methods such as logistic regression (Allison, 1984). In such discrete time models, the hazard rate is the probability that an event will occur at a particular time given that the subject is at risk at that time. The hazard rate reflects the

probability that a relationship between a client and an agency will end in a given year, provided that it has not already ended prior to that year. Our goal is to determine the influence of our explanatory variables on the hazard rate. This can be described as follows:

$$Log\left[P_i/(1-P_i)\right] = \beta_0 + \beta_1 X_{i1} + ... + \beta_r X_{ir}$$

Where P_i is the probability that our dependent variable is 1, $P_i/(1-P_i)$ represents the odds of dissolution and the coefficients $\beta_1, \ldots, \beta_r$ represent the effect of the independent variables on the natural logarithm of the odds of tie dissolution.

In order to perform the analysis described above, we constructed a sample containing one record for each year a tie is at risk of experiencing an event and a record for the year an event takes place. Ties that were still active at the end of the period of our study period were considered right-censored. For ties that ended in an event, the last record is for the event year. For a number of ties information on control variables or CDA experience was incomplete or inaccurate, leading to their exclusion from the sample. Our final sample consisted of 1,114 tie-year records.

The observations in our sample are not independent. We have multiple records for the same tie if it lasts more than one year. Secondly, our sample contains a number of ties that share the same client or agency, creating clusters in the data in which records are not independent. Therefore, we estimated our models with robust Huber-White standard errors and adjusted standard errors for within cluster correlation, clustering on the client organization (Long and Freese, 2006).[8]

[8] We also clustered on agency and relationship and the results remain unchanged.

For Hypotheses 2-5, we need to assess the magnitudes of the experience effects. The fact that we use logistic regression implies that we cannot simply interpret the coefficients as we would in OLS regression analysis to determine the magnitude of the effects. In logistic regression the effect of a change in one variable depends on the initial probability of the event occurring, i.e., on the values of the other variables (Hoetker, 2007). The recommended approach is to calculate the change in odds, and subsequently the change in probabilities, caused by a change in the focal variable while keeping the other variables at their mean or at another theoretically meaningful value (Jaccard, 2001). Given the varying ranges in experience that we observe for different types of CDA experience, we opt to calculate the change in probabilities caused by a one-standard deviation increase in experience, keeping everything else at the mean. This procedure provides the effect of a change in the focal variable for an average observation (Hoetker, 2007).

RESULTS

On average, ties in our sample lasted 3.9 years and over 25 percent of ties lasted longer than 5 years.[9] The vast majority of clients only have one agency (68%). These findings are fairly consistent with results of other studies on agency-client relations (e.g., Baker et al., 1998). Summary statistics and correlations for these ties and the clients involved can be found in Table 1.

We ran separate models for the different types of experience. Table 2 provides a summary of the results. All models provided significant statistical fit according to the log likelihood test and they are significantly better than the intercept only model. To verify that

[9] This is an underestimation of the tie duration as it treats right-censored ties as if they ended in the last year they were observed. So the actual average duration may be somewhat higher. This number differs from the mean duration provided in Table 1 due to the fact that the mean reported in Table 1 includes repeated observations of longer ties, so it provides a lower but consistent mean.

multicollinearity is not a problem in the models that include multiple types of experience, which are in some cases highly correlated, we check the variance inflation factors of our independent variables. These factors are all well below 10 (Neter et al., 1996).

In our base model (Model 1), we find that the dummy variable indicating whether a tie is with an in-house agency or not is significantly negative. In addition, we find that the clients' history of tie dissolutions has a significant positive effect on the odds of tie dissolution. This is in line with Kim et al.'s (2006) claims that the likelihood of a firm dissolving or replacing a tie in a network is a function of its past history with such changes. Moreover, we find an inverted U-shaped relationship between relationship duration and the likelihood of dissolution. This pattern is in line with the honeymoon phase and the negative duration dependence found in previous research (e.g., Baker et al, 1998; Levinthal and Fichman, 1988).[10]

Model 2 includes the general CDA experience measure. In support of Hypothesis 1, we find a negative relationship between CDA experience and the odds of tie dissolution ($p<0.001$). In terms of practical magnitudes, we find that a one-standard deviation increase in CDA experience reduces the probability of tie dissolution by 43.4%. Subsequently, we distinguished between M&A experience and alliance/EJV experience to test Hypothesis 2. Model 3 shows that alliance/EJV experience has a significant negative effect on the odds of tie dissolution ($p<0.05$), while M&A experience does not exhibit any significant spillover effects. A one-standard deviation increase in alliance/EJV experience reduces the probability of tie dissolution by 53.4%. A similar increase in M&A experience would reduce the probability by a mere 5.8%, though due to the lack of significance the range of

[10] The peak of our curve occurs around 6 years, while the risk of dissolution reached its maximum at 11 years in the advertising industry study of Baker et al. (1998). Industry experts indicated to us that the difference may be attributed to changing norms of agency-client relationships between the respective time periods studied.

that estimate solidly encompasses zero. Taking both the significance levels and the practical magnitudes into account, we find support for Hypothesis 2, but the results also mean a caveat on Hypothesis 1.

Table 1: Summary Statistic and Correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1 In-house tie	0.24	0.43																					
2 Tie curation	3.64	2.75	.15																				
3 #accounts (agn)	14.5	14.46	-.53	-.04																			
4 Agency CDA exp	1.1	4.11	-.14	.06	.26																		
5 Agency acquired t-1	0.01	0.12	-.07	.00	.01	.07																	
6 #of agencies (cl)	1.91	2.3	-.22	-.01	.21	.15	.04																
7 #Past dissolutions (cl)	1.41	1.84	-.20	-.25	.08	.01	.00	.36															
8 Client age	63.87	42.56	-.06	.10	.04	.00	-.03	.12	.06														
9 Ln (log) sales	0.03	0.18	-.01	-.07	-.04	.02	-.04	-.03	-.04	.00													
10 Employees (log)	3.52	0.94	-.26	.06	.18	.13	.06	.36	.26	.17	.02												
11 # 2-dig. SIC codes (cl)	1.8	1.41	.05	.03	.01	.06	-.03	.05	.10	.11	.03	.15											
12 CDA exp	5.87	10.69	-.10	.33	.07	-.01	.01	.43	.25	.19	.00	.35	.18										
13 All./EJV exp	3.06	7.55	-.07	.29	.12	.01	.02	.40	.20	.10	-.02	.24	.04	.89									
14 Alliance exp.	2.24	6.89	-.04	.25	.11	.01	.02	.35	.17	.03	-.02	.16	.01	.80	.98								
15 EJV exp.	0.82	1.72	-.15	.24	.07	.00	.00	.33	.20	.32	.01	.42	.15	.69	.48	.27							
16 M&A exp.	2.81	5.29	-.10	.26	-.03	-.03	-.01	.31	.22	.24	.03	.38	.31	.75	.37	.23	.71						
17 Hor. M&A exp.	1.31	3.49	-.08	.16	-.05	-.04	.00	.24	.16	.06	.03	.28	.28	.63	.27	.16	.51	.89					
18 Vert. M&A exp.	0.34	0.99	.04	.24	-.05	-.01	-.03	.07	.01	.42	.01	.20	.11	.32	.15	.06	.42	.43	.14				
19 Hor. All. Exp	1.17	5.05	.00	.19	.08	-.01	.00	.30	.13	-.01	-.02	.05	-.03	.68	.90	.97	.09	.09	.07	-.01			
20 Hor. EJV exp.	0.32	0.83	-.15	.13	.06	.02	-.01	.40	.27	.32	.01	.35	.07	.63	.44	.26	.88	.64	.49	.38	.13		
21 Vert. All. Exp	0.36	0.92	-.04	.29	-.01	.01	.03	.17	.12	.14	.01	.34	.12	.56	.43	.31	.65	.51	.36	.32	.09	.50	
22 Vert. EJV Exp	0.21	0.55	-.02	.29	-.02	.00	-.02	.04	-.05	.22	.01	.24	.03	.37	.23	.09	.68	.41	.22	.45	-.03	.46	.52

Table 2: Logistic regression results

A negative coefficient reflects a decrease in the likelihood of tie dissolution, corresponding to an increase in tie stability.

		Model 1		Model 2		Model 3		Model 4	
Constant		-4.15	***	-4.77	***	-4.76	***	-4.77	***
		(0.74)		*(0.77)*		*(0.77)*		*(0.77)*	
Duration		1.26	***	1.34	***	1.35	***	1.36	***
		(0.23)		*(0.23)*		*(0.23)*		*(0.21)*	
Duration Sq.		-0.11	***	-0.11	***	-0.11	***	-0.11	***
		(0.02)		*(0.02)*		*(0.02)*		*(0.02)*	
In-house		-0.67	*	-0.68	*	-0.67	*	-0.68	*
		(0.32)		*(0.33)*		*(0.33)*		*(0.33)*	
Number of agencies		-0.09		-0.04		-0.04		-0.05	
		(0.08)		*(0.07)*		*(0.07)*		*(0.07)*	
Change in log sales		-0.23		0.00		0.01		0.02	
		(0.45)		*(0.47)*		*(0.51)*		*(0.51)*	
Client employees (log)		-0.08		0.02		0.03		0.03	
		(0.16)		*(0.17)*		*(0.17)*		*(0.17)*	
Client Age		-0.00		-0.00		-0.00		-0.00	
		(0.00)		*(0.00)*		*(0.00)*		*(0.00)*	
# diss. in past 3yrs (clients)		0.33	*	0.39	***	0.40	***	0.40	***
		(0.13)		*(0.12)*		*(0.12)*		*(0.12)*	
# accounts (agencies)		0.00		0.00		0.00		0.00	
		(0.01)		*(0.01)*		*(0.01)*		*(0.01)*	
#accounts lost (ag) 3yrs		0.00		0.00		0.00		0.00	
		(0.01)		*(0.01)*		*(0.01)*		*(0.01)*	
Agency CDA		-0.00		-0.01		-0.01		-0.01	
		(0.03)		*(0.03)*		*(0.03)*		*(0.03)*	
Agency acquired in t-1		0.15		0.24		0.29		0.30	
		(0.64)		*(0.66)*		*(0.67)*		*(0.67)*	
# 2-digit SIC codes (client)		-0.08		-0.05		-0.07		-0.07	
		(0.09)		*(0.09*		*(0.09)*		*(0.09)*	
Cum. CDA exp.	***H1***			-0.06	***				
				(0.02)					
M&A exp.	***H2***					-0.01		-0.02	
						(0.03)		*(0.04)*	
Alliance/EJV exp.	***H2***					-0.10	*		
						(0.04)			
Alliance exp.	***H3***							-0.11	*
								(0.05)	
EJV exp.	***H3***							-0.06	
								(0.12)	
Industry Dummies		*YES*		*YES*		*YES*		*YES*	
Log likelihood		-359.99		-353.38		-352.05		-352.32	
Pseudo R^2		0.14		0.16		0.16		0.16	
Wald chi^2		111.63	***	138.62	***	146.36	***	134.95	***
N		1114		1114		1114		1114	

*** p < 0.001, ** p < 0.01, * p< 0.05, † p< 0.1

Standard errors are in parentheses

In Model 4 we further refine our categories of CDA experience by distinguishing between alliance and EJV experience. The results show that alliance experience has a significant negative effect on the odds of dissolution ($p<0.05$), while the coefficients for EJV and M&A experience are not significant. The lack of spillovers resulting from EJV experience is somewhat unexpected. A one-standard deviation increase in alliance experience reduces the probability of tie dissolution by 50.1%. A similar increase in EJV experience would reduce the probability of dissolution by only 9.4%, though again the plausible range of this estimate encompasses zero. These results are consistent with Hypothesis 3, though they lead to a further caveat on Hypothesis 1.

Next we examine spillovers resulting from directional similarity. Models 5 and 6 (Table 3) show that both vertical alliance ($p<0.01$) and vertical EJV experience ($p<0.05$) have a significant impact on the odds of tie dissolution, while for horizontal types of collaborations only alliances lead to experience spillovers ($p<0.1$). The magnitudes of the spillovers provide some unexpected results. Contrary to what we proposed in Hypothesis 4a we find that a one-standard deviation increase in vertical alliance experience reduces the probability of tie dissolution by 28.1%, while a similar increase in horizontal alliance experience reduces the likelihood by 56.2%. For EJV experience, on the other hand, the magnitudes are in line with what we predicted in Hypothesis 4b. A one-standard deviation increase in vertical EJV experience reduces the probability of tie dissolution by 28.5%, while a similar increase in horizontal EJV experience reduces the likelihood by 13.2%, though due to the lack of significance the range of the latter estimate solidly encompasses zero. In short, our results pertaining to the effect of directional similarity on the occurrence of experience spillovers are mixed.

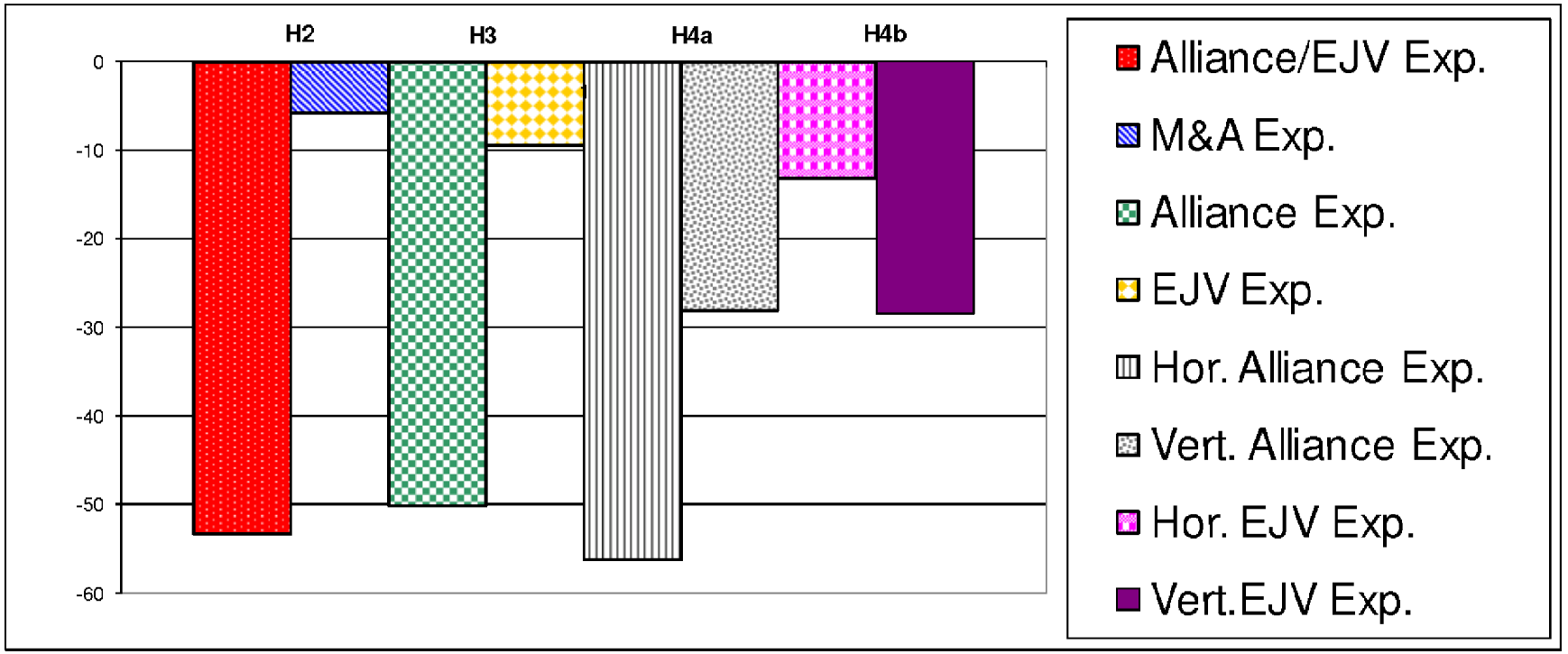
Table 3: Logistic regression results
A negative coefficient reflects a decrease in the likelihood of tie dissolution, corresponding to an increase in tie stability.

		Model 5		Model 6		Model 7	
Constant		-4.74	***	-4.53	***	-4.92	***
		0.78		0.77		0.79	
Duration		1.38	***	1.29	***	1.40	***
		0.22		0.23		0.22	
Duration Sq.		-0.12	***	-0.11	***	-0.12	***
		0.02		0.02		0.02	
In-house		-0.69	*	-0.66	*	-0.66	*
		0.33		0.32		0.32	
Number of agencies		-0.07		-0.07		-0.08	
		0.07		0.08		0.08	
Change in log sales		-0.01		-0.14		0.03	
		0.56		0.47		0.56	
Client employees (log)		0.02		-0.00		0.05	
		0.17		0.17		0.17	
Client Age		-0.00		-0.00		-0.00	
		0.00		0.00		0.00	
# diss. in past 3yrs (clients)		0.42	***	0.34	*	0.42	***
		0.13		0.14		0.13	
# accounts (agencies)		0.00		0.00		0.00	
		0.00		0.00		0.01	
#accounts lost (ag) 3yrs		0.00		0.00		0.00	
		0.01		0.01		0.01	
Agency CDA		-0.01		-0.01		-0.01	
		0.03		0.03		0.04	
Agency acquired in t-1		0.21		0.17		0.23	
		0.68		0.63		0.65	
# 2-digit SIC codes (client)		-0.08		-0.09		-0.11	
		0.09		0.09		0.09	
Vertical Alliance exp.	***H4a/H5***	-0.38	**			-0.22	
		0.14				0.17	
Horizontal Alliance exp.	***H4a***	-0.17	†			-0.20	*
		0.09				0.10	
Horizontal EJV exp.	***H4b***			-0.18		-0.02	
				0.16		0.24	
Vertical EJV exp.	***H4b/H5***			-0.65	*	-0.73	*
				0.26		0.30	
Vertical M&A exp.						0.15	
						0.15	
Horizontal M&A exp.						-0.00	
						0.04	
Industry Dummies		*YES*		*YES*		*YES*	
Log likelihood		-350.29		-354.91		-347.15	
Pseudo R^2		0.17		0.15		0.17	
Wald chi^2		133.90	***	119.17	***	140.22	***
N		1114		1114		1114	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

Figure 1

The effect of a one-standard deviation increase in CDA experience on the probability of tie dissolution. [a]



[a] The graph reflects the relationship between experience and the probability of dissolution, keeping all other variables at their mean.

However, our results pertaining to the interaction effect between modal and directional similarity offer some valuable insights into these mixed findings. By computing the magnitudes we find that, in the context of vertical CDA, EJV experience shows slightly larger spillovers than alliance experience (i.e., 28.1% vs. 28.5%). Both estimates are significantly different from zero, but the two estimates are not statistically different from each other. This shows that the strong positive spillovers resulting from modal similarity - as reflected in the negative effect of overall alliance experience on tie dissolution - are weakened in the presence of directional similarity. This pattern lends support to Hypothesis 5. The graphical representation of the effects of different types of experience on the probability of tie dissolution is provided in Figure 1. This further illustrates the differences among the CDA categories in Hypotheses 2-5.

Additional Analyses

To verify the robustness of our results, we performed several additional analyses. First, we included all types of horizontal and vertical CDA together in Model 7. Our results are consistent with the ones we presented above. Secondly, we re-ran the models with alternative specifications for experience, i.e., starting in 1991, rolling experience windows of different durations, and with the logarithmic transformation of experience. The results were consistent with those presented above. Thirdly, our original analyses were performed on a sample that included ties between clients and their in-house agencies.[11] To ensure that our results are not driven by their inclusion, we re-ran the models without the in-house ties. These analyses essentially replicated our previous results. Finally, we calculated the magnitudes of spillovers, keeping all other variables at their median rather than at their mean. Although the percentage changes in magnitudes caused by a one-standard deviation

[11] Approximately 19% of the total number of ties in the sample are with in-house agencies.

increase in experience differ slightly, the differences between the different types of activities remain consistent with the results reported above.

In order to understand the unexpected lack of support for Hypothesis 4a, illustrated by the higher spillovers from horizontal alliances than from vertical alliances, we perform some additional analyses. Hypothesis 4a was predicated on the overlap in routines between vertical alliances and supplier-buyer ties originating from directional similarity, or the content of collaboration. Hence, in order to understand this surprising result we examine the content of horizontal alliances in more detail. Consistent with prior research we classified alliances as horizontal based on the SIC codes of the partners in the alliance (e.g., Chan et al., 1997; Oxley, Sampson and Silverman 2009; Park and Russo, 1996). However, this fails to capture the potential heterogeneity that resides in these horizontal alliances. Direct competitors could form an alliance to perform a variety of tasks, entailing vertical, horizontal or other activities, all of which would be considered horizontal alliances given that they entail the cooperation of firms operating in the same industry. Yet the spillover potential could vary depending on the type of activities that occur in these horizontal alliances. Therefore, we distinguish between horizontal alliances that are fully horizontal, i.e., the activities performed in the alliance are classified in the same industry as the partners, and those that entail activities that are not of a horizontal nature. Our results show that fully horizontal alliances allow for lower experience spillovers (-13.1%) than direct competitors forming a horizontal alliance but performing vertical tasks in the alliance (-50.6%). These additional insights further illustrate the importance of directional similarity as a driver of experience spillovers, which is in line with our core arguments underlying Hypotheses 4a-4b.

DISCUSSION AND IMPLICATIONS

Recent research has devoted considerable attention to the benefits of maintaining and investing in long-term IORs (e.g., Kotabe et al., 2003; Nobeoka et al., 2002). In this paper we examined how firms' external corporate development activities, which constitute an important part of firms' strategies and entail at least some degree of inter-organizational collaboration, affect the longevity of their supplier-buyer ties. We argued that whether firms are prone to maintain long-term supplier-buyer ties depends on the presence of CDA-related routines that foster such ties. We explored the effect of a buyer firm's history of corporate development activities on the likelihood of its supplier ties dissolving. We argued that firms with considerable CDA experience benefit from valuable learning opportunities, pertaining to inter-organizational collaboration, which spill over to their supplier ties, leading to a decrease in the likelihood of tie dissolution. We find support for our arguments for CDA experience in general, and for several of the more refined experience categories. Subsequently, we compared the magnitudes of the spillovers resulting from different types of CDA. Our results showed that spillover effects do occur but that they vary for different types of experience.

Although we initially expected to observe at least some experience spillovers from M&A experience to supplier-buyer ties, we did not uncover any significant effects. This reiterates the arguments from previous research which has suggested that acquisition experience is associated with less fungible knowledge and skills, indicating that acquisitions benefit from experience spillovers while they do not necessarily contribute to them, resulting in asymmetric spillovers (Villalonga and McGahan, 2005; Wang and Zajac, 2007). M&As are very heterogeneous activities, in terms of the level of integration sought or the hostility from the target towards the acquirer amongst other things (Zollo and

Reuer, 2009). Hence, our results may be at least partially explained by the fact that there is more variance in the way these activities are conducted than in the other forms of CDA, and hence the level of similarity between the acquisitions and supplier-ties may be very low or even nonexistent in some instances. Moreover, inter-organizational collaboration ceases in M&As when the organizations are combined and the organizational boundaries are dissolved. Hence, collaboration across organizational boundaries is relatively short-lived, limiting the opportunities to develop relational routines.

In general, alliance experience seems to be most beneficial for supplier-buyer ties, which is consistent with the high level of modal similarity between these activities. Next, our results show that directional similarity also plays an important role. We find that among vertical relationships, i.e., with similarity in the direction of the collaboration, experience with higher-commitment collaborative relationships is particularly useful, provided that there is a moderate level of modal similarity as is the case with EJVs. Although the difference between spillovers from vertical alliances and from vertical EJVs is small, our results suggest that firms can make the most of their vertical collaboration experience if it took the form of EJVs. This suggests that the lower level of modal similarity is compensated by the higher opportunities for learning in high-commitment, high-intensity collaborations such as EJVs. By contrast, any experience spillovers that arise from horizontal activities only reflect the more superficial modal similarity. Thus, horizontal alliance experience turns out to be a stronger predictor of the continuation of supplier-buyer ties than horizontal EJV experience.

These findings have some noteworthy implications for research and practice. For one, we contributed to the learning literature by showing that learning processes are not as straightforward as they are often depicted in research on experiential learning in

organizational settings. Recent work already provided some support for the notion of experience spillovers from one activity to another (Villalonga and McGahan, 2005; Zollo and Reuer, 2009). In other words, firms can learn how to perform a specific activity by gaining experience with other activities. By looking at the effect of experience with different types of corporate development activities on relationship continuation, the presence and importance of experience spillovers is further corroborated. In our context, this implies that firms can improve the stability of their supplier-buyer ties by accumulating experience with external corporate development activities.

Our findings on the respective role of modal and directional similarity in determining the magnitude of experience spillovers emphasize the importance of distinguishing between learning from the form and from the content of collaborative experience. Traditionally, research has focused on comparing the effect of experience on the outcome of IORs under different conditions, rather than examining the differential effects of specific types of experience. More precisely, previous research has examined which types of collaborations benefit more from prior experience (e.g., Sampson, 2005), but has only rarely examined which types of collaborative experience offer the highest learning potential. Recently, Gulati et al. (2009) called for a more detailed examination of the differential effects of different types of partnering experiences on alliance outcomes. In line with this, we suspect that some of the mixed or limited support for the proposition that a firm's partnering experience contributes to its relational capability may be due to an over-aggregation of experience measures. Our results suggest that both intra-activity and the inter-activity learning research would benefit greatly from paying more attention to the differential learning potential that different types of collaborative experience - both in terms of the content and the form of collaboration - offer.

Recently, the literature on inter-organizational relations has been advanced by a call for more precision in the definitions used in IOR research and the categorization of different types of IORs (Mayer and Teece, 2008) and for a better understanding of the black box that constitutes the capability to manage these different types of relationships (Schreiner et al., 2009). In line with this, we make clear distinctions between different forms of inter-organizational collaborations, i.e., between those aimed at corporate development and supplier-buyer ties, and build on the underlying differences and similarities to gain a better understanding of the capabilities that accrue through these different activities and their applicability to other forms of collaborations. Our additional analyses on the effect of horizontal alliance experience - distinguishing between fully horizontal alliances where both the partners and the alliance operate in the same industry and collaborations where direct competitors pursue vertical or other activities - further illustrates the importance of developing more fine grained measures and classification schemes.

Our results also have important implications for the literature on the formation, evolution and termination of long-term inter-organizational relations. Previous research has largely focused on the benefits and drawbacks of different types of inter-organizational relationships in order to explain the different types of relationships, or different sourcing strategies we observe in reality, ignoring other factors that may affect firms' tendencies to pursue specific types of relationships. We fill this gap by looking at the way organizations' corporate development histories affect their propensity to maintain long-term supplier-buyer ties.

Finally, previous research has called for a co-evolutionary perspective on alliances that takes into account how alliances are embedded in and evolve with the participants'

strategies (e.g., Ariño and de la Torre, 1998; Koza and Lewin, 1998). In this paper we examine how a firm's strategy in terms of corporate development affects its inter-organizational relationships, and supplier-buyer ties in particular. Our results suggest that strategies characterized by extensive pursuits of corporate development, which generally entail considerable organizational change, need not be disruptive to relationships with external partners and instead create valuable learning opportunities.

From a practical point of view, we provide advertising agencies (and other types of suppliers) with an additional way to identify particularly attractive clients. Agencies invest considerably in those relationships starting even before the relationship is formalized by investing time and resources in account pitches. Pitching for an account is a high risk, high investment activity. Not only is the outcome of these pitches often very unpredictable, the winners of the account may find themselves investing in what could be a very short-lived relation. Our interviews with agency executives suggested that they are looking for ways to distinguish between clients that will be able and willing to build up a long-term relationship and clients who will only keep their agencies for a short period of time. As Davies and Prince (1999:76) pointed out: "agencies clearly need guidance concerning when relationships, or which accounts, are most vulnerable", and our results offer agencies insights into this. Yet, the termination of a relationship is not only detrimental for suppliers - although this negative effect is more often emphasized as it potentially endangers their livelihood - but often also has severe implications for the client who stands to lose a partner with in-depth knowledge of its current and future products, industry and customers (Horsky, 2006). Therefore, we believe that clients would also benefit from the realization that the collaborative experiences gained in one activity could also prove valuable in other collaborative settings.

LIMITATIONS AND FUTURE RESEARCH

The limitations and contributions of the present study suggest several avenues for future research. One limitation lies in the fact that we restricted our study to two dimensions of similarity. CDA and supplier-buyer ties could be similar on other dimensions that may affect the level of spillovers between CDA and supplier-buyer ties. For example, we already showed the importance of the directional similarity which has some bearing on the tasks at hand, but this could be further refined by looking at the purpose of the activities and the tasks involved (e.g., R&D vs. marketing or manufacturing alliances/EJVs).

Although we tested our hypotheses on a sample of advertising agency-client relationships, we believe our arguments and findings apply to other types of supplier-buyer ties as well. For instance, major corporate expansion events have also been shown to affect supplier-buyer ties in the automotive industry (Martin et al., 1995). Future research in different settings is therefore promising too. Furthermore, a different setting would also allow for further examination of the role of supplier CDA experience. We focused on the role of buyer-side CDA experience because the clients play a critical role in shaping relationships with advertising agencies. We controlled for agency CDA experience, but failed to find a significant result. Yet, this could potentially be attributed to a limitation of our context. Advertising agencies do not frequently engage in alliances or EJVs and most of their CDA experience comprises of M&A activity, making this a less than ideal context to examine the importance of supplier-side CDA experience. Hence, it is worth examining in other contexts whether supplier-side CDA experience would allow for experience spillovers. Eventually, the comparison of the respective roles of supplier and buyer-side CDA experience would provide an interesting addition to our work.

We examine only one direction of experience spillovers, i.e., from CDA experience to supplier-buyer ties. This is not to say that experience spillovers cannot occur in the opposite direction. Previous research showed that experience spillovers are not necessarily symmetric, as, for example, alliance experience influences acquisitions but the reverse does not hold (Villalonga and McGahan, 2005). Unfortunately, our data does not allow us to test whether experience spillover occur in both directions between the various forms of CDA and supplier-buyer ties. Given the longitudinal nature of our study, we do not believe that our findings are in fact the result of reverse causality but we acknowledge the possibility that experience spillovers occur in both directions and suggest that future research explores this possibility.

Another limitation of this study pertains to the inferences we make about the accumulation of experience and the development of relational routines, and our reliance on a count measure of CDA experience. Our data does not allow us to examine the underlying mechanisms that lead to CDA experience having a stabilizing effect on supplier-buyer ties. Examining different dimensions of firms' CDA experience stocks or pursuing more detailed field work could shed more light on the underlying mechanisms. Since we cannot determine the exact mechanisms leading to the experience spillovers we observe, we cannot rule out the possibility that the relationship between CDA experience and tie dissolution may be more pronounced in some types of firms than in others. The supplier ties of extremely large, diversified organizations may benefit less from CDA experience because sourcing decisions are made at the divisional or departmental level and may be less influenced by company-wide CDA activity. However, most firms in our sample are not very diversified. The average number of 2-digit SIC codes the client firms are active in is 1.7, and just over 60% of firms are active in only one 2-digit SIC code. Furthermore, we

controlled for the number of SICs in which the client operates, and found no significant effect. Still, in diversified firms CDA and supplier related decisions and interactions may occur in different parts of the organization. Hence, future research on experience spillovers would also benefit from a better understanding of the mechanisms that allow managers to learn from the collaborative experiences in other parts of the organization.

In this paper we looked at the probability of a tie ending and argued that this depends on the firm's CDA history. Our results imply that CDA experience affects the development of relational routines and consequently a firm's propensity to keep a tie in a given year. Future research could examine whether there are performance benefits to such long-lasting ties, and whether this depends on firms' experience with various types of CDA. Altogether, further research on the dynamics between CDA and supplier-ties, and their respective consequences, appears well warranted.

Appendix 1: Overview of the key concepts, their operationalization and the key literatures in which they are frequently used.

Concept	*Definition*	*References*	*Key literatures*	*Operationalization*
Inter-organizational relation (IOR)	IORs are linkages that occur between an organization and one or more organizations in its environment.	Oliver (1990)	IOR literature; network literature	Agency-client relationships, alliances and equity joint-ventures. *Sources: Standard Directory of advertisers; SDC*
Supplier-buyer tie	Type of IOR. Market-type procurement relationship in which a buyer purchases products or services from a supplier and which typically relies on competitive bidding.	Baker et al., (1998); Martin et. al (1995)	Supplier-buyer relations literature; TCE; Resource dependence theory; international business literature	Advertising agency-client relations *Source: Standard Directory of advertisers.*
Corporate development activities (CDA)	Corporate development activities are the activities firms pursue to expand or reshape their business. External corporate development activities are those that entail some degree of inter-organizational collaboration or interaction (i.e., alliances, EJVs and M&As).	Reuer and Ragozzim (2006); Zollo and Reuer (2009)	M&A literature; foreign expansion literature, alliance literature	Corporate development activity experience reflects client firms' experience with alliances, equity joint-ventures, and M&As. Experience is measured as the count of the number of CDA the focal firm pursued between 1988 and the focal year. *Source: SDC*
Alliance	Collaborative arrangements whereby two or more organizations each contribute resources in pursuit of economic goals.	Martin and Salomon (2003)	IOR literature; international expansion literature; innovation literature; TCE literature	Collaborative arrangements between client firms and other organizations (not agencies), without equity involvement. Alliance experience is measured as the count of the number of alliances the focal firm pursued between 1988 and the focal year. *Source: SDC*
Equity joint-venture (EJV)	Equity joint-ventures are collaborative arrangements whereby firms achieve their cooperative purpose by creating a new entity, to which they contribute equity as well as resources and employees.	Martin and Salomon (2003)	IOR literature; international expansion literature; innovation literature; TCE literature;	Equity joint-ventures between clients and other organizations (not agencies). EJV experience is measured as the count of the number of EJVs the focal firm pursued between 1988 and the focal year. *Source: SDC*
Vert. Alliance	Alliances that entail the collaboration between two or more organizations operating at different stages of the value chain.	Oxley et al. (2009); Rindfleisch (2000); Stuart et al. (2007)	IOR literature; international expansion literature; innovation literature; TCE literature	An alliance is of a vertical nature when the industry of one party sold more than 5 percent of its output to, or received more than 5 percent of its inputs from, the industry of the other party. Vertical alliance experience is measured as the count of the number of vertical alliances the focal firm pursued between 1988 and the focal year. *Source: SDC, Input/output tables*
Vert. EJV	Collaborative arrangements whereby firms that operate at different stages of the value chain create a legally separate venture, to which they contribute equity and resources.	Oxley et al. (2009); Rindfleisch (2000); Stuart et al. (2007)	IOR literature; international expansion literature; innovation literature; TCE literature;	An equity joint-venture is of a vertical nature when the industry of one party sold more than 5 percent of its output to, or received more than 5 percent of its inputs from, the industry of the other party. Vertical EJV experience is measured as the count of the number of vertical EJVs the focal firm pursued between 1988 and the focal year. *Source: SDC, Input/output tables*

Appendix 1 *(Continued)*: **Overview of the key concepts, their operationalization and the key literatures in which they are frequently used.**

Horizontal Alliance	Collaborative arrangement between firms operating in the same industry.	Chan et al., (1997); Oxley et al. (2009) ; Rindfleisch (2000)	IOR literature; international expansion literature; innovation literature; TCE literature	Alliances involving partners operating in the same industry (at the 3-digit SIC level) were coded as horizontal. Horizontal alliance experience is measured as the count of the number of alliances the focal firm pursued with firms operating in the same industry between 1988 and the focal year. *Source: SDC*
Horizontal EJV	Collaborative arrangement in which two or more firms operating in the same industry jointly set up a legally separate entity to which they contribute resources to achieve collaborative goals.	Chan et al., (1997); Oxley et al. (2009) ; Rindfleisch (2000)	IOR literature; international expansion literature; innovation literature; TCE literature	EJVs involving partners operating in the same industry (at the 3-digit SIC level) were coded as horizontal. Horizontal EJV experience is measured as the count of the number of EJVs the focal firm pursued with firms operating in the same industry between 1988 and the focal year. *Source: SDC*
Mergers and Acquisitions	Acquisitions entail one party (the target) relinquishing control thoroughly and permanently to the other (the acquirer). Mergers entail the combination of two firms into one entity.	Barkema and Vermeulen (1998); Datta et al. (2009); Nadolska and Barkema (2007)	M&A literature, TCE, international expansion literature, organizational learning literature	Acquisitions are completed deals between two firms that change ownership (completely). M&A experience is measured as the count of the number of M&As the focal firm pursued (as an acquirer) between 1988 and the focal year. *Source: SDC*
Experience Spillovers	Experience spillovers can be defined as the impact of the experience accumulated with one activity on the outcome of another activity.	Cormier and Hagman (1987); Finkelstein and Haleblian (2002); Zollo and Reuer (2010)	Transfer theory; organizational learning literature	The effect of experience spillovers is proxied by the effect of CDA experience with CDA on likelihood of tie dissolution (tie stability).
Relation-specific assets	Relation-specific assets are idiosyncratic interaction routines that develop over time through interaction and allow firms to communicate and collaborate more effectively.	Asanuma (1989); Fichman and Levinthal (1991); Kotabe, Martin and Domoto (2003); Levinthal and Fichman (1988)	IOR literature; supplier-buyer relations literature	The duration of agency-client relationships is used as a proxy for the relations-specific assets that have developed in them. *Source: Standard Directory of advertisers*

Chapter 4[1]

IT TAKES TWO TO CONTINUE TO TANGO: A TWO-SIDED VIEW ON POST-M&A SUPPLIER-BUYER TIE CONTINUATION

ABSTRACT

We examine the effect of buyer-side M&As on the continuation of buyer-supplier ties, distinguishing between the supplier's and the buyer's incentives to keep their relationship going. We focus on post-M&A changes in competitive overlap between the merged company and the other buyers in the focal supplier's customer base. We test our hypotheses on a sample of 798 advertising agency-client ties, for which the client was involved in an acquisition. Our results show that, from the buyer's perspective, an increase in competitive overlap has a negative effect on the likelihood of tie continuation which is moderated by the importance of the service provided by the focal suppliers to the buyer. From the supplier's perspective we find that the negative effect of an increase in competitive overlap on the likelihood of tie continuation is moderated by the importance of the buyer to the supplier. Our results suggest that buyers are concerned about sharing a supplier with competitors, but these fears are mitigated when they are in a better bargaining position. Moreover, our findings suggest that suppliers also exhibit concerns about competitive overlap, but they are less likely to terminate a focal relationship to avoid conflicts with other buyers when the focal buyer is an important or prominent buyer.

[1] This chapter is the result of joint work with Xavier Martin. It is due to appear in the 2011 *Best Papers Proceedings of the Academy of Management.*

INTRODUCTION

Supplier-buyer ties have proven to be of intrinsic value for firms as they have the potential to bring about the development of relation-specific assets and lead to performance improvements (Kotabe et al., 2003; Levinthal and Fichman, 1988). Yet, we only have a limited understanding of the evolution and dissolution of these relationships. Early work predominantly focused on the formation of these relationships as an alternative to vertical integration and on the different types of exchange relationships firms maintain with suppliers (e.g., Baker, 1990; Cusumano and Takeishi, 1991; Heide and John, 1990; Monteverde and Teece, 1982). More recent work has in turn focused on knowledge sharing, the development of relation-specific assets, the role of trust in supplier-buyer ties and on their performance implications (e.g., Kotabe et al., 2003; Lazzarini, Miller and Zenger, 2008; Mesquita, Anand and Brusch, 2008; Mudambi and Helper; 1998; Srinivasan and Brush, 2006). Although research on the evolution and dissolution of inter-organizations in general, and alliances in particular (e.g., Ariño and de la Torre, 1998; Koza and Lewin, 1998; Reuer and Ariño, 2002; Reuer and Zollo, 2005), is growing, the supplier-buyer tie literature has remained relatively mum on this issue. Some of the most important insights we gained so far stem from the work on the development of relation-specific assets. More precisely, the evolution and the dissolution of supplier-buyer ties have been depicted as a function of the past duration of these relationships and the relation-specific assets that develop in them (Asanuma, 1989; Levinthal and Fichman, 1988). In addition, we have some indication that firms' corporate development activities (CDA) affect the evolution of their supplier relationships. For example, supplier-buyer ties are affected by the foreign expansion efforts of the firms involved (Martin, Mitchell and Swaminathan, 1995; Wan et al., 2008). In addition, Baker et al. (1998)'s results suggested

that M&As increase the likelihood of supplier-buyer tie dissolution, but they do not provide any insights into the underlying decision processes. Although this work has offered valuable insights and laid the foundations for future research, more detailed examinations of the interplay between corporate development activities, or strategic actions and change in general, and supplier-buyer ties have yet to emerge. This is particularly important in light of the growing recognition of the notion that inter-organizational relations co-evolve with firms' strategies (Koza and Lewin, 1998), an issue which has enjoyed relatively little attention in the context of supplier-buyer ties.

A second and equally important gap in the literature pertains to the effect of competitive dynamics on supplier-buyer tie stability. When forming relationships with suppliers firms take into account how these relationships could affect their competitive position. Ample research has focused on the benefits firms can achieve by selecting the right suppliers and maintaining relationships that are conducive to knowledge sharing and joint problem solving (Hoetker, 2005; Lakshman and Parente, 2008; Petersen, Handfield and Ragatz, 2005). Yet, the competitive implications of sharing suppliers with competitors have enjoyed less attention. Suppliers can leak sensitive strategic information from one buyer to another, thereby deteriorating the focal customer's competitive advantage (Frazier et al., 2009). The consequences of these potential leakage or spillover effects remain unclear. On the one hand, research has shown that it reduces the likelihood of information sharing, and thereby potentially the value firms can accrue through relationships with suppliers (Frazier et al., 2009; Li, 2002). On the other hand, there is some anecdotal evidence that the risks of knowledge sharing with suppliers who also serve competitors may be minimal in some instance. For example, inter- and intra-firm barriers to knowledge sharing prevent competitors who shares suppliers with Toyota from obtaining the same

advantages as Toyota, even though the latter engages in extensive knowledge sharing with its suppliers (Dyer and Hatch, 2006). The limited empirical evidence and the potential lack of generalizability of some of this work, highlights the need to further examine competitive dynamics triggered by supplier-buyer relationships. In addition, we have no insights into what happens if the competitive dynamics are altered due to changes in one of the exchange partners or the environment, and in particular how this affects the partners' willingness to continue the collaboration.

Yet, the pursuit of corporate development activities - and M&As in particular - by one of the exchange partners may considerably alter these competitive dynamics. In this study we focus on the competitive dynamics triggered by buyer-level M&As. When two buyers are consolidated through a merger or acquisition, their suppliers may suddenly be faced with the potential of serving a buyer who is also a competitor of one of its other incumbent buyers, leading to concerns of information leakage or spillovers. Hence, buyer M&As may affect the intensity of competitive overlap in the suppliers' customer bases, i.e., the degree to which it includes buyers that compete in the same industry. By examining the effect of M&As on supplier-buyer tie continuation, and by focusing in particular on the M&A induced changes in competitive dynamics, we contribute to both the literature on the interplay between corporate development activities and supplier-buyer ties, and the literature on competitive dynamics in the context of supplier-buyer-ties.

In addition, we contribute to the supplier-buyer tie literature, and to the IOR literature more generally, by considering both the supplier and the buyer's incentives to continue their relationship. Previous research has largely taken a one-sided view of supplier-buyer ties. At best it has taken into account the characteristics of both parties, but it has largely failed to take into account the dynamics and reactive processes that take place

in relationships when changes occur in one of the firms. This omission in the literature can be attributed to the implicit assumption that clients call the shots in exchange relationships, which underlies most of the literature on supplier-buyer relationships. However, we challenge this assumption and contribute to the general supplier-buyer tie literature by taking a two-sided view of post-M&A tie continuation.

We test our hypotheses on a sample of 798 relationships between firms and their advertising agencies, which constitute important service suppliers. The buyer firms in the sample were all involved in an acquisition in 1995, either as a target or as an acquirer. Prior to our study we conducted a number of interviews with agency executives in Europe and the U.S. to gain insights into the industry and factors that may potentially drive relationship stability and dissolution. From these interviews and from advertising industry publications it became apparent that client acquisitions are disruptive to agency-client ties but that very little is known about what determines post-M&A tie continuation. A recent study of 11 mega-mergers by advertising industry publication *Adweek* showed that - despite the common belief that clients maintain the leading agencies of the acquiring company - post-M&A agency relationship reconfiguration takes many forms (Baar, 2005). Recent examples further illustrate that post-M&A agency-client relationship continuation is not simply a case of the acquirer dominantly enforcing its ties upon the target. IBM's agency, Ogilvy & Mather, was chosen to represent the Lenovo account following its acquisition of the IBM personal computer business (Adweek, 2005). Whirlpool on the other hand consolidated all of its creative tasks with its incumbent agency, Publicis USA, after the acquisition of Maytag (Sampey, 2006).

THEORY

Competitive Overlap

In many cases, suppliers serve customers from the same industries, thereby creating competitive overlap in their customer base. Changes in the suppliers' customer base, either through the addition of new customers or as a result of one of its clients becoming involved in an acquisition or merging with another firm, in turn may affect the level of competitive overlap. We focus on the latter source of changes in competitive overlap and on its implications for the post-M&A continuation of supplier-buyer ties.

A change in competitive overlap in the supplier's portfolio has different implications for the supplier and buyer. From the supplier's perspective an increase in competitive overlap could lead to economies of scale, but at the same time it increases the risk of losing incumbent buyers. From the buyer's perspective, an increase in competitive overlap in the supplier's portfolio will trigger concerns about potential knowledge spillovers. Hence, the implications of an increase in competitive overlap differ between the supplier and the buyers but both parties' willingness to continue the collaboration will be affected, making this a particularly interesting effect to study from a two-sided perspective. Figures 1 and 2 in Appendix 1 illustrate changes in post-M&A competitive overlap from the buyer's and the supplier's perspective, respectively.

Buyers' Perspective

A number of scholars have argued that the success of supplier-buyer ties, and the benefits that accrue to the parties involved, are largely determined by the level of knowledge sharing and transfer between the exchange partners (e.g., Kotabe et al., 2003; Uzzi, 1996; 1997). The benefits of knowledge transfer are particularly likely to accrue to

firms that have been in a long-term relationship which has resulted in the development of relation-specific assets that facilitate knowledge sharing (Kotabe et al., 2003). Some of the knowledge shared between exchange partners is relation-specific, while some may be redeployable in other contexts, or give insights into the firms' overall strategies and future plans (Nobeoka et al., 2002). Sharing the latter type of knowledge may put the firms' competitive position at risk. Yet, the literature has only paid limited attention to the risks associated with extensive information sharing between buyers and suppliers. These risks have been well documented in the context of collaborations between competitors (e.g., Kale, Singh and Perlmutter, 2000; Oxley and Sampson, 2004; Oxley and Wada, 2009). In horizontal collaborations firms face the challenge of finding the right balance between knowledge sharing to achieve the goals of the collaboration and controlling knowledge flows to avoid unintended leakage to competitors (Oxley and Sampson, 2004). Although the threat of information leakage may be less obvious in supplier-buyer relations than in horizontal collaborations, the damage it could potentially cause should not be underestimated. Extensive knowledge sharing with a supplier could be detrimental to a firm's competitive position if that supplier is linked to some of the firm's competitors, as indirect linkages can lead to knowledge spillovers (Ahuja, 2000a).

Knowledge leakage to competitors through a common supplier may be the result of intentional actions on the supplier's part or of inadvertent spillovers. The prospect of keeping the relationship going should offer incentives to the supplier to keep the buyer's knowledge confidential (Heide and Miner, 1992; McEvily and Marcus, 2005). However, when buyers engage in an M&A, suppliers have had an ongoing relationship with only one of the parties involved in the acquisition, i.e., with either the target or the acquirer.[2] Yet, it

[2] In theory, the target and the acquirer could have coincidently been using the same supplier before the merger or acquisition. However, in our context these cases are very rare.

is the party with whom they do not have a prior relationship that will cause a potential increase in competitive overlap.[3] So it is not unrealistic to assume that in fact the supplier's loyalties lie more with its other incumbent buyers than with the merging organization, thereby reducing their incentives to keep information confidential.

Even if the supplier does keep the information it receives from its buyers confidential, other buyers may be able to make inferences from the supplier's actions for the focal buyer (Li, 2002). Firms often use signals from competitors - which are sent out with a variety of goals in mind ranging from pre-emption to colluding on prices - to determine their own strategic actions (Heil and Robertson, 1991). When a firm sends the signals out themselves, they can control what is made public and competitors need to assess whether the signal is a bluff or a true sign of what the firm is about to do. However, competitors can also pick up signals from suppliers' actions (Li, 2002). For example, by observing the actions of a common advertising agency, competitors may infer when new products or promotions will be launched, or when an increase in advertising intensity will take place. Rather than waiting for the actual action, competitors can then prepare their reaction based on the knowledge obtained through spillovers, which could have substantial implications for the focal client's planned strategic actions. The success of a firm's competitive attack is a function of both the speed of other firms' reactions to the attack, as well as the unpredictability of the original attack (Bowman and Gatignon, 1995; Ferrier, 2001). Hence, a reduction in unpredictability and an increase in the speed of reaction of

[3] The post-merger entity will include the activities of both pre-merger entities, i.e., those of the target and of the acquirer. Unless the target and acquirer operate in exactly the same industries, the supplier will find itself dealing with a buyer that is active in more industries in comparison to the pre-M&A situation, should the relationship continue post-M&A. As a result, the supplier could be faced with higher levels of competitive overlap in its portfolio. For example, if the target and acquirer operate in different industries, the target's supplier will have to deal with a potential increase in competitive overlap caused by the addition of the acquirer's businesses. Hence, the increase in overlap is caused by the buyer firm with whom the focal supplier didn't have a relationship prior to the acquisition, i.e., the acquirer in this example.

competitors, as a result of information leakage through a common supplier, could be detrimental for a firm's performance or competitive advantage.

It has to be noted that sharing a supplier with direct competitors is not always problematic - as evidenced by Toyota which managed to sustain a quality advantage over its U.S. competitors despite sharing valuable information with common suppliers (Dyer and Hatch, 2006) - and in some instances may even provide benefits. For example, having a common supplier may offer opportunities to collude (Bernheim and Whinston, 1985). Despite the potential benefits, concerns about intentional or inadvertent information leakage to competitors through a common supplier are pervasive in many industries (Anand and Goyal, 2009; Asker and Ljunqvist, 2008; Boot, 2000; Boyd and Spekman, 2008; Henke, 1995; Rogan, 2008; Villas-Boas, 1994). For example, large firms are generally reluctant to share a bank with a rival in their industry for underwriting purposes because they fear conflicts of interest and information leakage (Asker and Ljunqvist, 2008). Firms are often also reluctant to share an advertising agency with direct competitors as this may lead to spillovers of sensitive information and faster competitive responses to the client's actions, e.g., in the form of retaliatory price promotions, preempting advertising campaign releases or accelerated product launches (Villas-Boas, 1994). The consequences of competitive overlap - in general and as a result of agency-level M&As - have been well documented in advertising industry publications. For example, when Bozell merged into Lowe, one of the former's prominent clients, The Andrew Jergens Company, decided to terminate its relationship with Bozell since the newly merged agency also served Johnson & Johnson, a competitor of the Andrew Jergens Company in several markets (Advertising Age, 2003). Yet, there are also examples of agencies that handle competing clients. For example, Starcom Mediavest handled both Procter & Gamble's

Folger's coffee brand and rival Kraft Food's Maxwell House coffee brand (Fitzgerald, 2004).

Previous research has shown that firms are less likely to form relationships with partners of their rivals if their collaboration requires significant co-specialization to avoid rivals potentially free riding on relational investments, or proprietary knowledge or capabilities (Gimeno, 2004). When they do form relationships, the potential leakage effect, Li (2002) argued, discourages firms from sharing information along the supply chain, thereby not achieving the potential benefits associated with knowledge sharing with exchange partners. However, Li's model does not take into account the possibility of switching to a supplier that does not serve a direct competitor and consequently, opting for extensive knowledge sharing in a setting in which the risks of information leakage to competitors is reduced considerably. Yet in many contexts this is a very viable option, which many buyers opt to take. Hence, we argue that an increase in competitive overlap between the merged company and the supplier's other incumbent buyers, in terms of the industries in which they operate, will reduce the likelihood of the focal tie continuing after the acquisition.

> *Hypothesis 1: An increase in competitive overlap between the industries in which the newly combined buyer operates and those represented in the focal supplier's customer base, will decrease the likelihood of post-M&A tie continuation.*

So far we focused on the downside of competitive overlap and knowledge spillovers. Yet, there may also be an upside to an increase in competitive overlap, i.e., potentially being on the receiving end of knowledge spillovers. In fact, some firms strategically use knowledge spillovers by actively seeking out suppliers or customers that

also deal with competitors or by locating close to potential sources of knowledge spillovers (Alcácer and Chung, 2007). While we have focused on the effects of being a potential source of leakage, much of the literature on location choice and knowledge spillovers has largely focused on firms as recipients of spillovers. Recent work in this area showed that firms base their location choices on their own capabilities, the location's knowledge activity and competitors' anticipated actions in order to maximize the net spillovers (Alcácer and Chung, 2007; Shaver and Flyer, 2000). The fears associated with being a source of knowledge spillovers are particularly pertinent amongst leading firms, who have more to lose from information leakage, while laggards are more likely to actively pursue knowledge spillovers and also benefit more from spillovers (e.g., Alcácer and Chung, 2007; Salomon and Jin, 2008, Shaver and Flyer, 2000). Extending these arguments to the context of spillovers originating from sharing suppliers with competitors, we argue that the more a focal buyer stands to lose from spillovers, the less likely they will be to continue the relationship. Although spillovers through common suppliers can extend well beyond information that pertains directly to the services or products provided by the supplier, e.g., to information on firm strategy, we predominantly focus on the spillover effects that are directly associated with the service or products provided in the supplier-buyer relationship.

> *Hypothesis 2: The negative effect of an increase in competitive overlap on the likelihood of tie continuation will be further intensified by the importance of the service (product) provided by the supplier to the buyer.*

Suppliers' Perspective

The implications for suppliers of one of their clients becoming involved in an acquisition can be substantial. While the organization and strategy literature has largely

overlooked this issue, the limited research that exists on this issue in the field of finance has shown that M&As have important implications for supplier's cash flows, market share and performance, as well as for their retention as a supplier post-M&A (Fee and Thomas, 2004). Yet, the literature has failed to discuss under which conditions suppliers would opt to terminate a relationship with a buyer, in general, or more specifically after their customer has been involved in an acquisition. Despite this theoretical void, there is ample evidence that in reality it is not always the buyer deciding which relationships will be maintained post-M&A. For example, when PNC Bank acquired National City recently, executives decided to revise and restructure their advertising agency portfolio. Yet, PNC Bank's incumbent agency Doner declined to defend the account (McMains, 2009). Agencies rarely openly discuss the reasons why they will not defend an account, or why they would sever the tie themselves before it is called in review. We postulate that buyer-level M&As, and the changes they bring about, will affect suppliers' willingness to continue their relationships with the consolidated buyers. We focus on one important factor that stands to affect the supplier's willingness to continue the collaboration, namely the effect of an increase in competitive overlap in the supplier's portfolio.

From the suppliers' point of view, an increase in competitive overlap offers both opportunities and threats. By serving more customers in the same industry, suppliers can leverage their knowledge about the focal industry and achieve economies of scale. Despite these potential benefits, suppliers also face the risk of losing business as a result of the increase in competitive overlap and the accompanying concerns regarding the protection of buyers' valuable private information. For example, LB Works terminated its relationship with Starbucks after LB Works became integrated with its parent Leo Burnett, to avoid conflicts with the latter's McDonalds account (Fitzgerald, 2004). A lot of attention has

been devoted in advertising industry publications to the actions agencies take after they become involved in an acquisition in order to deal with potential account conflict. Yet, it remains unclear how agencies react to potential account conflicts resulting from a buyer-level M&A. In many instances a supplier will have to decide whether it will sever its tie with the merging organization, and avoid information leakage concerns from other competing incumbent buyers, or keep the relationship and risk losing one or more other clients. Given that the merging company itself may be considering reviewing its supplier portfolio, the latter option could be very risky. Consequently, the fear of losing important clients due to competitive overlap is likely to lead to suppliers preemptively ending their relationship with the merging customer. The more buyers that are at risk of defecting if the supplier continues to serve the merging buyer, the more likely it will be that the supplier will sever the tie with the merging company.

> *Hypothesis 3: An increase in the proportion of the supplier's customers that is at risk as a result of post-M&A changes in competitive overlap will have a negative effect on the likelihood of post-M&A tie continuation.*

Yet, under certain conditions the supplier may be willing to incur the risk of losing other incumbent buyers to continue to serve the merging company. This is particularly likely if the merging buyer is a big buyer, or could potentially become a bigger buyer down the line. In addition, if the merging company is a very prominent buyer and maintaining the relationship will have a positive bearing on the supplier's status, visibility and its ability to attract new buyers in the future, the supplier will be more willing to keep the focal relationship even it if leads to an increase in competitive overlap and potential conflicts with other incumbent buyers.

Hypothesis 4: The negative effect of an increase in competitive overlap on the likelihood of tie continuation is moderated by the importance of the merging buyers to the focal supplier.

METHODS

Data and Sample

In order to test our hypotheses we study the post-M&A continuation of relationships between firms (buyers) and their advertising agencies (suppliers). We deem this setting to be particularly suited for our research purpose for several reasons. First of all, advertising agencies are suppliers of important services. Advertising has the potential to contribute to brand recognition, growth and sales, and consequently to firm performance (Assmus, Farley and Lehmann, 1984; Dekimpe and Hannsens, 1995; Jones, 2007; Kim, 1993). Moreover, decisions pertaining to changes in agency relations even affect the value of the firm, as the onset of a new agency-client relationship leads to negative stock market reactions (Mathur and Mathur, 1996). Hence, decisions on the retention of agency-client ties are important to firms. In addition, physical asset specificity tends to be extremely low or non-existent in agency-client relationships and agreements usually entail no more than a 90-day notice for cancellation (Horsky, 2006). Consequently, post-M&A tie continuation decisions can be made relatively quickly and are not hindered by long-term contracts or high levels of assets specificity that may cause partners to be locked into the relationship. Although the acquisition process and the integration phase, including resource reconfiguration, can take several years to be completed, trade press and industry experts emphasized that in this context the decision to maintain or dissolve agency relationships is made soon after the deal is closed. This reduces the risk of confounding the consequences

of the focal M&A on tie continuation with those of other strategic events. Finally, advertising agency-client relations provide a context in which we observe varying levels of competitive overlap in the suppliers' portfolios, and knowledge spillovers pose a potential threat.

Our unit of analysis is the supplier-buyer (agency-client) tie. In order to get a sample of supplier-buyer ties for which the buyer was involved in an acquisition, we collected data from the Thomson Financial Security Data Corporation (SDC) database on all completed, domestic M&As that took place in the U.S. in 1995. Subsequently, we verified for which acquisitions data on supplier (agency) relationships was available for both the target and the acquirer prior to the acquisition and for the acquirer or the merged company after the acquisition. This resulted in a sample of 237 M&As, which were associated with 798 supplier-buyer relationships. Data on agency-client ties were obtained from *The Standard Directory of Advertising Agencies* and *The Standard Directory of Advertisers*, also known in the industry as *The Red Books.* This directory provides a comprehensive listing of U.S. advertising agencies and their clients and has been published on an annual basis for the past 80 years. It contains detailed information on advertising agencies and on advertisers, including account information, specialization of the agency, core business of the advertisers, contact information on key agency personnel, ownership details, and the number of employees. These data have been used successfully in several past studies (e.g., Baker et al., 1998; Broschak, 2004).

Dependent variable

Our dependent variable is dichotomous and takes on the value 1 if a tie is maintained post-acquisition (in 1997), and 0 otherwise. We opted to determine post-M&A tie continuation based on the 1997 edition of the *Standard Directory of Advertisers*, since

industry publications and interviews with agency executives indicated that tie retention decisions are made relatively soon after the deal is announced in this context.

Independent Variables

Buyer Perspective Variables. Our measure of competitive overlap from the buyer's perspective should reflect the buyer's concern about knowledge spillovers to competitors in each of the industries the firm operates in, as well as the degree of potential spillovers in each industry. We start by identifying all the clients of the focal agencies, and the industries (SIC codes) they operate in. Next we look at the number of the focal buyer's SIC codes that are also represented in the agency's account portfolio through other customers, and the degree of overlap in all of these SIC codes, prior to the acquisition. Hence, we determined how many SIC codes of the merged company overlap with the SIC codes in the supplier's portfolio and the degree of overlap in each SIC code. Next, we divided this number by total number of SIC codes that overlap. This gives us a measure of pre-acquisition competitive overlap from the buyer's perspective, reflecting the extent of spillovers buyer firms may face. In order to determine a measure of *buyer perspective change in competitive overlap* resulting from the acquisition we need to determine what the implications would be for competitive overlap if the newly combined buyer would continue to work with the supplier after the acquisition. Hence, we compare all of the merged buyer's SIC codes with those of the other incumbent buyers in the supplier's portfolio, thereby calculating a virtual level of competitive overlap – i.e., the level of overlap that would arise if the tie continued after the acquisition and everything else stayed constant.[4] The change in competitive overlap is then defined as:

[4] This is a *virtual* level of competitive overlap as some of the ties are terminated and the actual level of competitive overlap cannot be computed. Hence, we compute the level of competitive overlap that would arise post-M&A if the relationship were to continue and everything else would stay equal.

Change in buyer perspective competitive overlap =

$$\frac{\text{Virtual degree of overlap in all SIC codes}}{\text{Virtual number of SIC codes that overlap}} - \frac{\text{Degree of overlap in all SIC Codes}}{\text{Number of SIC codes that overlap}}$$

For Hypothesis 2 we need a measure of the importance of the service or product provided by the supplier, which in this context translates to the importance of advertising to the firm. In order to determine the *importance of advertising* to the client firm, we computed a ratio of the client's advertising expenditure to its (primary) industry's advertising expenditure. The higher the ratio, the more important advertising is to the firm. Firms that represent a higher share of the industry's total advertising expenditure can be construed as leaders while those representing a small share can be considered to be laggards in terms of advertising. Data on firm and industry level advertising expenditure was obtained from the 1994 volumes of the *Standard Directory of Advertisers* and *Ad $ Summary*.

Supplier Perspective Variables. From the supplier's perspective competitive overlap is predominantly a concern in terms of the potential loss of clients. Hence, for the *supplier perspective change in competitive overlap* measure we focus on the number of the agency's clients that share at least one SIC code with the focal client as a proportion of the agency's total number of clients. This measure takes into account both the potential loss of clients and the agency's dependence on these clients. We identified all clients of the focal agency that share at least one SIC code with the focal buyer prior to the acquisition. Then we combined the SIC codes of the target and the acquirer and calculated how many of the agency's incumbent clients share at least one SIC code with the consolidated buyer, to obtain a virtual measure of post-M&A competitive overlap, i.e., the competitive overlap that would emerge if the supplier continues to serve the newly combined buyer and

everything else stays equal. Subsequently, we measured the change in competitive overlap as follows:

Change in supplier perspective competitive overlap =

$$\frac{\text{Virtual number of buyers that share SIC codes with merged buyer}}{\text{Virtual number of supplier's buyers}} -$$

$$\frac{\text{Number of buyers that share SIC codes with (pre - M \& A) buyer}}{\text{Number of supplier's buyers}}$$

For Hypothesis 3 we need a measure of the focal client's importance to the supplier. We use the client's absolute level of *advertising expenditure* for this purpose. A firm with a large advertising budget, is an attractive client to maintain from an agency's point of view, even if the agency only represents a small part of the client's budget as it may lead to an increase in business in the future in addition to the benefits associated with increased status and visibility.

Control Variables

We include a number of relationship, client, agency and acquisitions level control variables. We control for the *strength* of an agency-client relationship by its duration (Levinthal and Fichman, 1988; Kotabe et al., 2003), i.e., the number of years it has existed from its formation until 1995. We tracked the relationship back to 1970 or the earliest year we could observe it. For some relationships we could not determine the start date, either because it was prior to 1970 or as a result of missing information for the client companies. Hence, we included a dummy variable that takes on the value of 1 if a tie is potentially left censored, i.e., the start date may precede the earliest year we observe the relationship.

We constructed two measures to determine *agency quality* and performance. Firstly, we use the advertising industry rankings published annually in *Advertising Age.*

These are based on the total billings of an agency, which is an indication of its performance and also affects its reputation (Polonsky and Waller, 1995). We coded the top 100 agencies, assigning a score of 100 to the highest ranking agency, 99 to the second highest, and so on. A score of 0 was assigned to any agency not appearing in the top 100 of the 1994 ranking. Secondly, we use the *awards* advertising agencies win in annual competitions as an indication of their performance and the quality of their services. We focus on two competitions, i.e., the Andy Awards and the Effie Awards. Although a variety of industry-wide competitions are held each year, we opted to focus on these two as they are both prestigious awards, yet they focus on different performance criteria. The Effie Awards reward agencies for efficient and effective campaigns and services, while the Andy Awards focus more on the recognition of outstanding creative work (Polonsky and Waller, 1995). As agencies can win multiple awards in the same competition each year, but in different categories, we counted the number of awards each agency won in the period of 1992-1995 in both competitions.

We also control for changes in status that an agency incurs as a result of being linked to the combined organization, rather than to the independent client it served prior to the deal. A firm's status affects its ability to attract customers and partners (Jensen and Roy, 2008; Podolny, 1993; Stuart, 2000). Consequently, the fear of experiencing a decline in status, i.e., status anxiety, can prompt firms to detach themselves from certain partners in an attempt to protect their own status (Jensen, 2006). In order to determine an agency's status, we identified all the agency's clients and determined which ones were high profile and high status clients. Serving leading and highly visible advertisers affects agencies' visibility, legitimacy and status. Hence, we determined the position of all clients served by the focal agency in the top 500 of leading advertisers in 1994. We used the rankings

published annually, based on firms' annual advertising expenditures, by *Ad $ Summary*. We assigned a score of 500 to the highest ranking advertiser, 499 to the second highest, and so on. A score of 0 was assigned to any company not appearing in the top 500 of the 1994 ranking. Subsequently, we computed the average position of a focal agency's clients, and use this as a measure of status. The post-M&A *change in status* is then defined as the change in the average position of the focal agency's accounts in case the agency also starts serving the other party or the combined organization, keeping everything else constant.

In addition, we control for the type of acquisition by means of three dummy variables. If an acquisition is between firms that operate in the same 4-digit primary SIC code, the acquisition is coded as *horizontal*. When the target and acquirer's primary industries are in the same 2-digit SIC code, we coded them as *related deals.* If the acquisition was not related or horizontal, we coded them as *other types of deals.* We identified whether a focal tie was associated with the target or acquiring organization prior to the deal. We constructed a dummy variable that takes on the value of 1 if the tie was associated with the *target* and 0 otherwise, as target ties may have a lower likelihood of being maintained post-M&A (Baker et al., 1998; Karim and Mitchell, 2000).

We control for the *number of agencies* a client has, as a higher number of agency ties increases the complexity and costs of managing ties, while a lower number of ties may increase dependence on the focal agency (Broschak, 2004). We control for an agency's dependence on the focal client by the *number of accounts* the focal agency has. Agencies with few accounts are more dependent on each individual client than agencies with a high number of clients, and hence, may be more willing to do whatever it takes to keep an account. We also control for the *pool of alternatives* available to the clients after the merger by including the number of agencies available in the same state as the client's focal

agency. Finally, we include a dichotomous control variable to indicate whether a tie is with an *in-house agency* (coded 1) or not (0).

Analysis

Given the nature of our data and our dependent variable, we use logistic regression to test our hypotheses. Our goal is to determine the influence of our explanatory variables on the likelihood of post-M&A tie continuation. This can be described as follows:

$$Log\left[P_i/(1-P_i)\right] = \beta_0 + \beta_1 X_{i1} + \ldots + \beta_r X_{ir}$$

Where P_i is the probability that our dependent variable is 1, $P_i/(1-P_i)$ represents the odds of continuation and the coefficients $\beta_1, \ldots, \beta_r$ represent the effect of the independent variables on the natural logarithm of the odds of tie continuation.

Our sample contains a number of ties that share the same client or agency, creating clusters in the data in which records are not independent. Therefore, we estimated our models with robust Huber-White standard errors and adjusted standard errors for within cluster correlation, clustering on the client organization (Long and Freese, 2006).[5]

RESULTS

On average, ties were 6.1 years old at the time of the acquisition. Clients have, on average, just under two agencies. The majority of the clients in the sample have only one agency. The agencies in our sample have, on average, just under 25 accounts. Ties of acquiring clients account for just over half of the ties in our sample (57%). Additional summary statistics and correlations can be found in Table 1.

[5] We also clustered on agency and the results remain unchanged.

Table 1: Summary statistics and correlations

		Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Post-M&A tie cont.	0.41	0.49																				
2	In-house	0.15	0.36	.29																			
3	Left Censored	0.20	0.40	.13	.21																		
4	Target	0.42	0.49	-.12	.06	.03																	
5	Hor. Acq.	0.26	0.44	-.01	.07	.10	.04																
6	Related Acq.	0.37	0.48	.00	-.10	-.05	-.02	-.45															
7	Other Acq.	0.38	0.48	.01	.04	-.04	-.02	-.46	-.59														
8	Agency's # acc.	24.86	29.04	-.06	-.39	-.03	-.04	-.04	.08	-.04													
9	Client's # agn.	1.81	2.19	-.08	-.30	-.17	-.13	-.27	.32	-.07	.14												
10	Tie duration	6.11	5.80	.15	.00	.24	-.06	-.05	.03	.02	.11	.06											
11	Agency top 100 pos.	7.50	23.00	.08	-.14	.00	-.02	-.05	.14	-.09	.33	.12	.09										
12	# of awards (agn)	1.42	3.40	.09	-.18	.02	-.07	-.10	.12	-.03	.30	.17	.16	.42									
13	# alt. agns. (state)	681.93	516.57	.15	.45	.09	.02	-.07	.05	.02	-.13	-.03	.03	.17	.25								
14	Change in status	-32.19	74.90	-.25	-.92	-.19	-.07	-.09	.10	-.02	.36	.32	.00	.15	.19	-.39							
15	Cl. Adv. Exp. (000)	149000.00	297000.00	-.10	-.17	-.13	-.02	-.22	.37	-.18	.08	.55	-.02	.16	.20	.19	.21						
16	Cl. to indus.adv exp	0.09	0.13	-.15	-.23	-.08	-.05	-.15	.09	.04	.08	.40	.08	.13	.21	.10	.24	.50					
17	Cl. # SIC codes	5.29	5.01	-.03	-.16	-.07	-.27	-.12	.05	.06	.16	.19	.10	.09	.16	.03	.19	.26	.45				
18	Comp. overlap (cl)	0.76	1.24	-.07	-.29	-.01	-.10	.02	.05	-.06	.29	.21	.12	.06	.05	-.06	.27	.11	.05	.09			
19	Comp. overlap (agn)	0.06	0.11	-.12	-.25	-.09	-.08	-.01	.07	-.06	-.02	.24	.06	-.02	-.03	-.09	.23	.16	.10	.09	.66		
20	Δ comp. overl. (cl)	0.03	0.57	-.09	-.02	-.05	.08	-.09	.04	.05	.18	-.03	-.09	.06	.00	-.03	.02	-.01	.01	-.02	-.41	-.25	
21	Δ comp. overl. (agn)	0.01	0.07	-.11	-.10	-.01	.02	-.13	.16	-.04	.07	.10	-.02	.06	.01	.02	.12	.02	-.03	.01	.16	-.04	.31

Table 2: Logistic regression results
A negative coefficient reflects a decrease in the likelihood of tie continuation.

		Model 1		Model 2		Model 3		Model 4		Model 5	
Constant		-0.66	**	-0.64	*	-0.38		-0.66	*	-0.54	
		(0.32)		*(0.32)*		*(0.36)*		*(0.32)*		*(0.37)*	
Inhouse		2.48	***	2.52	***	3.01	***	2.48	***	3.42	***
		(0.67)		*(0.67)*		*(0.91)*		*(0.69)*		*(1.03)*	
Left Censored		0.25		0.23		0.18		0.26		0.19	
		(0.26)		*(0.26)*		*(0.33)*		*(0.26)*		*(0.33)*	
Target		-0.48	*	-0.45	*	-0.36		-0.48	*	-0.43	†
		(0.23)		*(0.23)*		*(0.26)*		*(0.22)*		*(0.26)*	
Hor. Acq.		-0.01		-0.05		-0.09		-0.04		0.07	
		(0.27)		*(0.27)*		*(0.32)*		*(0.27)*		*(0.33)*	
Related Acq.		-0.04		-0.03		-0.18		0.00		0.09	
		(0.29)		*(0.29)*		*(0.31)*		*(0.29)*		*(0.32)*	
# accounts (ag)		0.00		0.00		0.00		0.00		0.00	
		(0.00)		*(0.00)*		*(0.00)*		*(0.00)*		*(0.00)*	
# agencies (cl)		0.00		-0.01		0.03		0.00		0.03	
		(0.03)		*(0.03)*		*(0.02)*		*(0.03)*		*(0.02)*	
Tie duration		0.04	*	0.04	*	0.03		0.04	*	0.02	
		(0.02)		*(0.02)*		*(0.02)*		*(0.02)*		*(0.02)*	
Agency top 100 pos.		0.01		0.01		0.01		0.01		0.00	
		(0.00)		*(0.00)*		*(0.00)*		*(0.00)*		*(0.00)*	
# of awards (agn)		0.07	†	0.07	†	0.07	†	0.07	†	0.06	
		(0.04)		*(0.04)*		*(0.04)*		*(0.04)*		*(0.04)*	
Change in status		0.00		0.00		0.01		0.00		0.01	
		(0.00)		*(0.00)*		*(0.00)*		*(0.00)*		*(0.01)*	
# alt agn (state)		0.00		0.00		0.00		0.00		0.00	
		(0.00)		*(0.00)*		*(0.00)*		*(0.00)*		*(0.00)*	
Change in comp overl. (buyer)	***H1***			-0.26	†	-0.74	*				
				(0.14)		*(0.29)*					
Cl. Relative adv exp.						-3.61	*				
						(1.53)					
Change comp. Overlap X Rel. Adv exp	***H2***					3.07	†				
						(1.57)					
Change in comp overl. (supplier)	***H3***							-2.94		-9.13	*
								(1.85)		*(4.00)*	
Cl. Adv Exp.										0.00	†
										(0.00)	
Change comp. Overlap X Cl. Adv Exp.	***H4***									0.00	*
										(0.00)	
Log likelihood		-394.01		-392.54		-293.98		-392.16		-293.78	
Pseudo R^2		0.10		0.10		0.12		0.11		0.12	
Wald chi^2		55.74	***	61.13	***	44.29	***	64.5	***	42.74	***
N		638		638		482		638		481	

*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1
Standard errors are in parentheses.

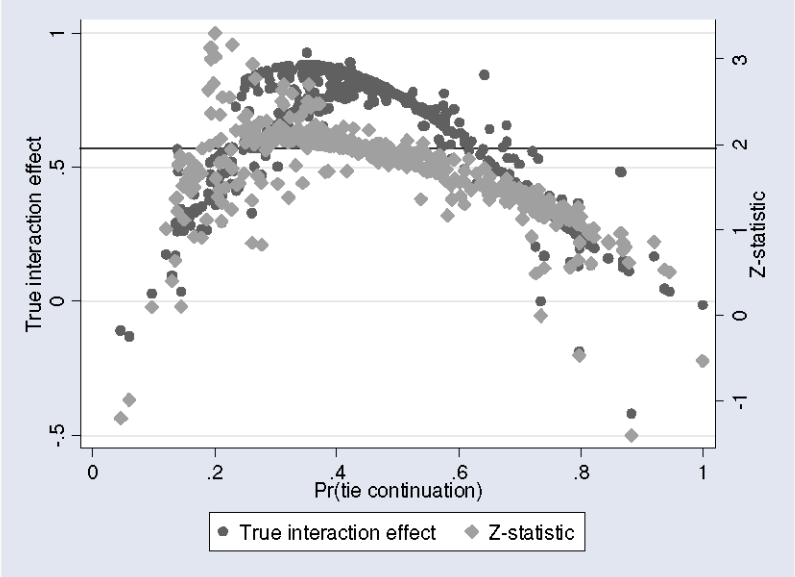
Table 2 provides a summary of the results. All models provided significant statistical fit according to the log likelihood test and are significantly better than the

intercept only model. In our base model (Model 1), we find that tie age at the time of the acquisition has a significant positive effect ($p<0.05$) on the likelihood of post-M&A tie continuation, suggesting that the strength of the ties and the relation-specific assets that develop in them create attachments that increase the likelihood of the tie surviving the acquisition (Levinthal and Fichman, 1988; Seabright et al., 1992). The quality of the agency, captured by the number of awards they have won, also has a marginally significant ($p<0.1$) and positive effect on the likelihood of tie continuation. Yet, target organizations' ties have a lower likelihood of being maintained after the deal ($p<0.05$). Surprisingly, the type of acquisition does not have a significant effect on tie continuation.

Our first set of hypotheses focused on the buyer's perspective and is tested in Models 2-3. In Model 2 we test the effect of a change in competitive overlap, brought about by the acquisition, on the likelihood of a tie continuing after the deal. In line with Hypothesis 1, we find that an increase in competitive overlap, between the agency's customer base and the industries the merged client operates in, reduces the likelihood of tie continuation ($p<0.1$). Subsequently, we postulated that the negative effect of an increase in competitive overlap would be intensified by the importance of advertising to the focal client. In model 3 we included an interaction term between the change in competitive overlap and the ratio of the firm's advertising expenditure to that of its industry. The results indicated a significant positive interaction effect. This finding is at odds with our hypothesized negative interaction effect. Yet, simply relying on the sign and significance of the coefficient of an interaction effect in logistic regression may be misleading (Hoetker, 2007; Wiersema and Bowen, 2009). More precisely, the interpretation of interactions between variables is complicated in logistic regression by the fact that the marginal effect of an interaction is not simply the coefficient for their interaction, and in fact, the

magnitude and the sign can differ across observations (Hoetker, 2007; Huang and Shields, 2000). To ensure the accuracy of our conclusions we opted for the method proposed by Wiersema and Bowen (2009) to calculate the true interaction effects. In order to draw accurate conclusions for interaction effects in logistic regression models, the sign and statistical significance of the value of the moderator variable's marginal effect on the relationship between the explanatory variables and the dependent variables over all sample values of the model variables should be assessed (Wiersema and Bowen, 2009). To examine the nature and significance of the marginal effects, we computed its values and the associated z-statistic values at each observation. Graph 1 shows the results of this procedure. The graph shows that the value and significance of the true interaction effect differs over the range of the predicted probabilities of tie continuation. Yet, the sign of the interaction effect seems to be fairly consistently positive.

Graph 1: True interaction effects
(H2: Change in competitive overlap X Relative Adv. Exp.)



Our calculations also show that the value of the true interaction effect computed at the variable means is 0.806 with a standard error of 0.406 (p=0.047). Based on the graphical analysis and the value of the interaction effect at the variable means, we can

conclude that the interaction effect is indeed positive and significant. Hence, in contrast to what we predicted in Hypothesis 2, the ties of leading advertisers in fact have a lower likelihood of termination after an increase in competitive overlap than those of firms which lag in terms of advertising expenditure. This is surprising since leading advertisers have more to lose from spillovers. Table 3 provides additional information on the interaction effect.

Table 3: Effect of moderating variable on marginal effect of change in competitive overlap (buyer) on the probability of tie dissolution.

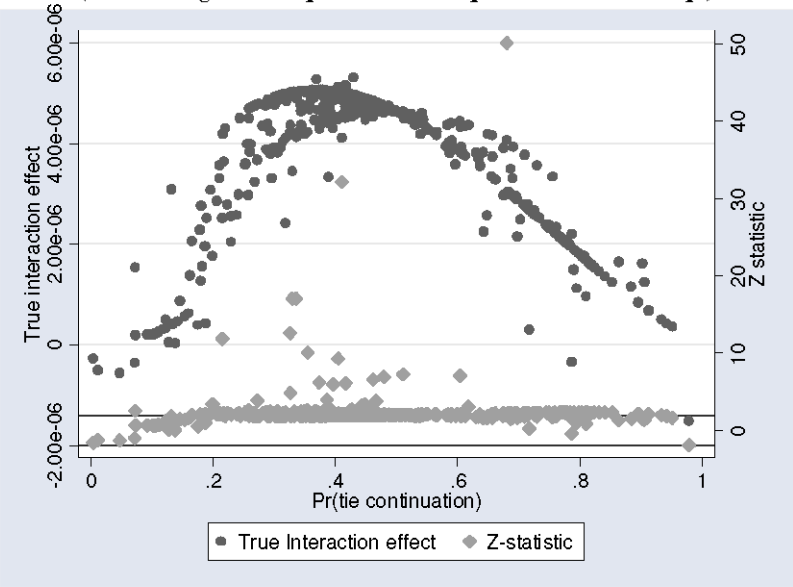
Value of Moderator (Rel. Adv Exp.)	Marginal effect of change in comp. overlap[1]	Z-statistic
Low	-0.22*	-2.49
Mean	-0.12*	-2.33
High	-0.02	-0.31

[1] Computed at the mean value of change in competitive overlap
*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1

Subsequently, we test our predictions on the effect of changes in competitive overlap from the supplier's point of view in Models 4-5. In Model 4 we fail to find a significant effect for the change in competitive overlap from the supplier's perspective. In other words, an increase in the number of clients that the agency could potentially lose as a result of competitive overlap in its customer base, does not decrease the likelihood of tie continuation. Hence, we fail to find support for Hypothesis 3.

In Model 5, we examine the interaction effect between change in competitive overlap, from the agencies' perspective, and the clients' advertising expenditure. The logistic regression results provide evidence of the predicted significant positive interaction effect. Graph 2 shows the true interactions effects and the associated z-statistic values we computed at each observation. The graph indicates that the interaction effect is positive and significant for most observations.

Graph 2: True interaction effects
(H4: Change in competitive overlap X Client Adv. Exp.)



Our results show that the value of the true interaction effect computed at the variable means is positive and highly significant ($p<0.001$). Based on the graphical analysis and the value of the interaction effect at the variable means, we can conclude that the interaction effect is indeed positive and significant. Hence, we find support for Hypothesis 4. Table 4 provides more information on the effect of the moderator client advertising expenditure on the marginal effect of change in competitive overlap on the probability of tie continuation.

Table 4: Effect of moderating variable on marginal effect of change in competitive overlap (supplier) on the probability of tie dissolution.

Value of Moderator (Cl. Adv Exp.)	Marginal effect of change in comp. overlap[1]	Z-statistic
Low	-2.97*	-2.37
Mean	-1.57*	-1.99
High	-0.20	-0.26

[1] Computed at the mean value of change in competitive overlap
*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1

Additional Analyses

We performed some additional analyses to further our understanding of the impact of changes in competitive overlap, particularly from the buyer's perspective. Our main analysis led to some unexpected results with respect to the interaction effect posited in Hypothesis 2. We found that the importance of the focal service to the buyer, an indication of how much they stand to lose, moderated the negative effect of a change in competitive overlap on the likelihood of tie continuation rather than intensify it as we predicted. This may be partially due to the measurement we use to proxy for the importance of the focal service, i.e., the firm's advertising expenditure relative to the average in its primary industry, as it doesn't capture the full impact of spillovers. We use two alternative measures to verify the robustness of our results. Firstly, we replicated the analysis with an interaction between change in competitive overlap and advertising intensity, defined as the ratio of firm-level advertising expenditure to total sales. This measure has been used as a proxy for intangible assets in prior research (e.g., Delios and Beamish, 2001) and although it is related to the measure we use in our main analysis, it may in fact be more suitable to test for the importance of the service to the buyer or for the intangible assets that may be at risk by sharing a supplier with competitors. As an alternative, we interact the change in competitive overlap with client firm size (measured by the number of employees). Large firms are often imitated because their size is perceived to be a sign of success (e.g., Baum, Li and Usher, 2000; Haunschild and Miner, 1997) and they are more likely to contribute to spillovers in specific locations (Shaver and Flyer, 2000). However, our results show that the negative effect of changes in competitive overlap is mitigated by advertising intensity and size, respectively, which is consistent the results from our main analysis.

DISCUSSION AND IMPLICATIONS

Our study examined the determinants of post-M&A supplier-buyer tie continuation, thereby making several contributions to the literature on supplier-buyer ties, but also to the literature on IORs in general and to the M&A literature.

Firstly, we provided additional insights into the drivers of relationship continuation and dissolution. In doing so, we emphasized the need to take into account both the buyer and the supplier's willingness to continue their relationship. Research on supplier-buyer ties has predominantly focused on the buyer's perspective when it comes to studying tie continuation. Consequently, relatively little is known about the implications of changes at the buyer level for the supplier's willingness to continue the relationship. In this paper we took a two-sided view on the implications of buyer-level acquisitions for the survival of supplier-buyer ties. Our results suggested that an increase in competitive overlap between the focal client and the other clients in the supplier's portfolio seems to matter for both the buyer and the supplier, although from the supplier's perspective the effect is contingent on the importance of the client.

From the buyer's perspective, our results showed that an increase in competitive overlap reduces the likelihood of tie continuation. These findings suggest that clients believe that the risks associated with an increase in competitive overlap outweigh the benefits of economies of scale or positive spillovers. Contrary to what we expected, this effect is moderated by the relative importance of the service provided by the supplier for the buyer. This unexpected result may be explained by the fact that firms that have a relatively high advertising budget also have the potential to exert great power and may be able to force the supplier to put Chinese walls or other protective mechanisms in place, or even get rid of other competing buyers in its customer base. Unfortunately our data does

not allow us to examine this explanation for the unexpected results. From the suppliers' perspective, our results show that an increase in competitive overlap is less of an issue when the relationship involves a prominent client, suggesting that under these conditions suppliers may be more willing to terminate other relationships to avoid conflicts with the focal one, or they are more willing to put protective mechanisms in place that allows them to keep all of their incumbent buyers.

In addition, we contribute to the M&A literature by examining the implications of M&As for the reconfiguration of inter-organizational relations, which are often deemed to be a critical resource for firms. Yet, research on resource reconfiguration has traditionally focused on resources that are owned and controlled by the merging organizations, i.e., that reside within firm boundaries (e.g., Capron et al., 1998; Capron, 1999; Karim and Mitchell, 2000). We contribute to this stream of work by taking into account the unique challenges that the reconfiguration of boundary spanning resources provide. The consolidated firm does not have sole ownership of these relationships and the relation-specific assets that have been developed in them, and consequently, reconfiguration decisions are not entirely within its control. By taking a two-sided view of post-M&A supplier-buyer tie continuation we provide insights into the unique challenges that reconfiguration of inter-firm resources presents to merging firms. Our results also showed that, despite a common belief in our setting, as well as in many other settings, that clients maintain the leading suppliers of the acquiring company, target ties may be at a disadvantage due to their origin but they do survive in many cases. In general, the strength of the tie and the quality of the supplier matter in the reconfiguration decision process.

Secondly, we also contribute to the M&A literature by taking one step towards a better understanding of the implications of M&As for the merging companies' suppliers.

Research in the organization and strategy field has largely ignored the implications of buyer-level M&As for suppliers. In the area of finance, however, some scholars have recognized that this is an important avenue for future research, as suppliers of merging companies will be affected in many ways, including changes in their client portfolios, performance, bargaining power, and even their future survival (Fee and Thomas, 2004; Shahrur, 2005).

Finally, our results also provide additional insights into the competitive dynamics following M&A. Previous research has focused on the direct implications of M&A for the competitive dynamics in the industries of the merging companies. Yet, the indirect competitive dynamics that may be triggered by potential knowledge spillovers through shared suppliers have been left unexplored in this area, and more generally as well. The benefits and risks associated with knowledge spillovers, and their implications for competitive dynamics, have been well documented in the context of horizontal alliances as well as in the context of location choice. Yet, in the context of supplier-buyer relationships, both in terms of partner selection as well as in terms of tie continuation, relatively little is known about the causes and implications of knowledge spillovers.

From a practical point of view, we provide agencies, and other suppliers, with insights into what drives relationship continuation after a client undertakes an acquisition. Overall, there seems to be a consensus in the advertising industry that such events will cause major changes. A recent study of 11 mega-mergers by advertising industry publication *Adweek* focused on determining the patterns of relationship reconfiguration (Baar, 2005). Nevertheless, very little is known about what really drives these changes and what the parties involved can do to keep the relationship going. Our results showed that an increase in competitive overlap between the client's industries and those that the agency

represents through other clients reduces the likelihood of a tie surviving after the acquisition. Being aware of the clients' concerns about this could provide agencies the opportunity to tackle this issue early on and try to convince clients that they have appropriate mechanisms in place to deal with this overlap. Our results also illustrated the importance of quality and strength of the ties for tie continuation, as well as the fact that target ties are at a disadvantage over acquirer ties when it comes to being maintained post-M&As. These insights could help agencies in general prepare for the aftermath of an acquisition by proactively emphasizing their quality and the strength of their relationship to the client, which is particularly important for the target's agencies as they are already at a disadvantage compared to those of the acquirer.

LIMITATIONS AND FUTURE RESEARCH

The contributions and limitations of the present study indicate several avenues for future research. The main contribution of the paper lies in unraveling the effect of changes in competitive overlap on post-M&A tie continuation. By focusing on a context in which the suppliers of one party can serve as substitutes for the suppliers of the other party, regardless of whether or not the acquisition expands the scope of the firm, and the level of competitive overlap in suppliers' customer bases varies widely we were able to provide some interesting insights into this.[6] Yet, this may also raise concerns about the generalizability of our results, in particular to manufacturing contexts where suppliers often only, or predominantly, serve firms from one industry, and suppliers of firms operating in different industries are less likely to be substitutes for each other. Hence, this

[6] Supplier of advertising, legal or auditing services can serve clients from a wide variety of industries, even though they may be specialized in some industries in some instances. As a result, the suppliers of the target firm can also serve the acquirer and those that serve the acquirer can also serve the target, even if the target and acquirer operate in different industries.

complicates the study of post-M&A tie continuation for M&As aimed at expanding the scope of the firm, i.e., related and unrelated deals, in manufacturing contexts. Studying post-M&A tie continuation and the role of competitive overlap may require researchers to focus on horizontal M&As, in which it is more likely that the suppliers of the target and the acquirer can act as substitutes for each other. This in turn may further reinforce concerns about the pertinence of competitive overlap. Nevertheless, the dynamics of competitive overlap are still relevant in these settings. For example, in the automotive context an engine manufacturer with multiple customers will have a high level of competitive overlap in its customer base as they will predominantly sell to car manufacturers. Yet, at a more subtle level, competitive overlap may be low if the buyers operate in different market segments, or higher if all the buyers for example operate in the high end sports cars segment. Hence, buyers and suppliers will face the same concerns about increases in competitive overlap following a buyer-level horizontal M&A. The existence of exclusive supplier-buyer relationships, for example in the context of the Japanese automobile industry, further suggest that concerns about knowledge spillovers resulting from competitive overlap in the supplier's customer base are also prevalent in manufacturing contexts (Nobeoka et al., 2002). Similarly, Gimeno (2004) showed that firms in the airline industry are often reluctant to form alliances with partners of competitors when collaborations require co-specialization out of fear of spillovers. In short, our results are generalizable to other ties between buyers and service providers, such as law firms and auditors, but also to manufacturing settings even though in the latter case the generalizability may be limited to the context of horizontal buyer-level M&As.

We postulated that, from the buyer's point of view, an increase in competitive overlap should be perceived to be particularly problematic when the firm has a lot to lose.

We argued that the more the focal buyer has to lose, the more they will try to avoid sharing the supplier with competitors. Yet, the measure we used to get at how much a firm has to lose, i.e., the firm's advertising expenditure relative to that of its primary industry, presents an important limitation, which may explain our failure to find support for our hypothesis. More precisely, our measure may not fully capture how much a firm potentially has to lose from spillovers through a common supplier. Hence, future research would benefit from examining whether the effect of competitive overlap differs for firms that are leaders in their industry and firms that are laggards. Focusing on a firm's overall performance, rather than whether or not it is a leading advertiser, should offer a more comprehensive account of the effect of an increase in competitive overlap.

Although we advance the literature by examining the consequences of buyer-level M&As for supplier-buyer ties from both the supplier's and the buyer's perspectives, the main limitation of this study presents itself in our inability to empirically determine who ends the ties. Our differential measures for changes in competitive overlap from the buyers' and suppliers' perspectives take into account important differences in what competitive overlap means and its implications for the different parties. Yet, future research would benefit greatly from examining in more detail who makes the decision to terminate or continue supplier-buyer ties, both in general, and following buyer-level M&As in particular.

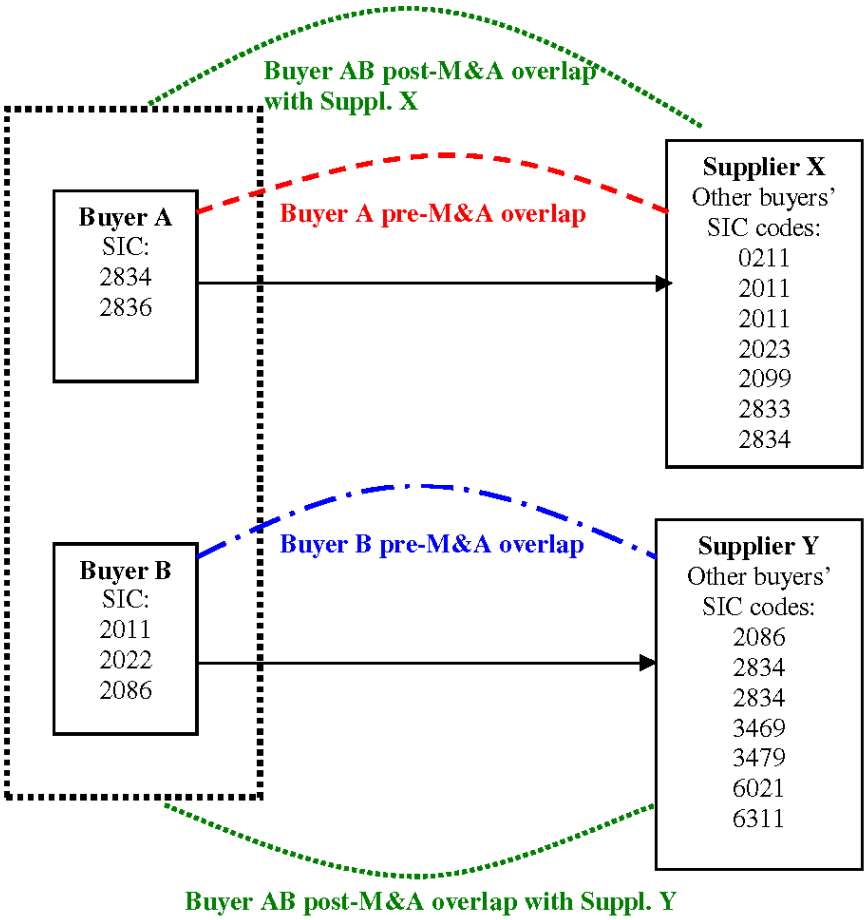
Moreover, we only look at the impact of buyer-level M&As for a set of focal ties, examining the determinants of tie continuation at the dyadic level. Yet, as some of our theoretical arguments suggest, other ties in the suppliers' portfolios may also be affected by a buyer-level M&A. For example, when the supplier is faced with an increase in competitive overlap it may consider terminating the tie with the merging buyer or with

some of its other incumbent buyers to reduce the impact of competitive overlap, or some of the incumbent buyers may choose to terminate their relationships with the focal supplier. Hence, looking at the dynamics in the suppliers' entire portfolio of relationships would provide additional insights into the implications of buyer-level M&As on supplier-buyer ties, and on suppliers in a broader sense.

Our results provided the first step in understanding the implications of M&As on boundary spanning resources. As a next step, research should focus on what happens to these resources after they have been reconfigured, in terms of their value and their survival. Much of the research on resource reconfiguration and redeployment has focused on the direction of redeployment and its implications for performance, implicitly assuming that the resources that are maintained or redeployed are not negatively affected by the reconfiguration process. However, successful redeployment or reconfiguration should not be taken for granted when the focal resources are knowledge-based and span across firm boundaries, as is the case with supplier-buyer ties and other inter-organizational relations.

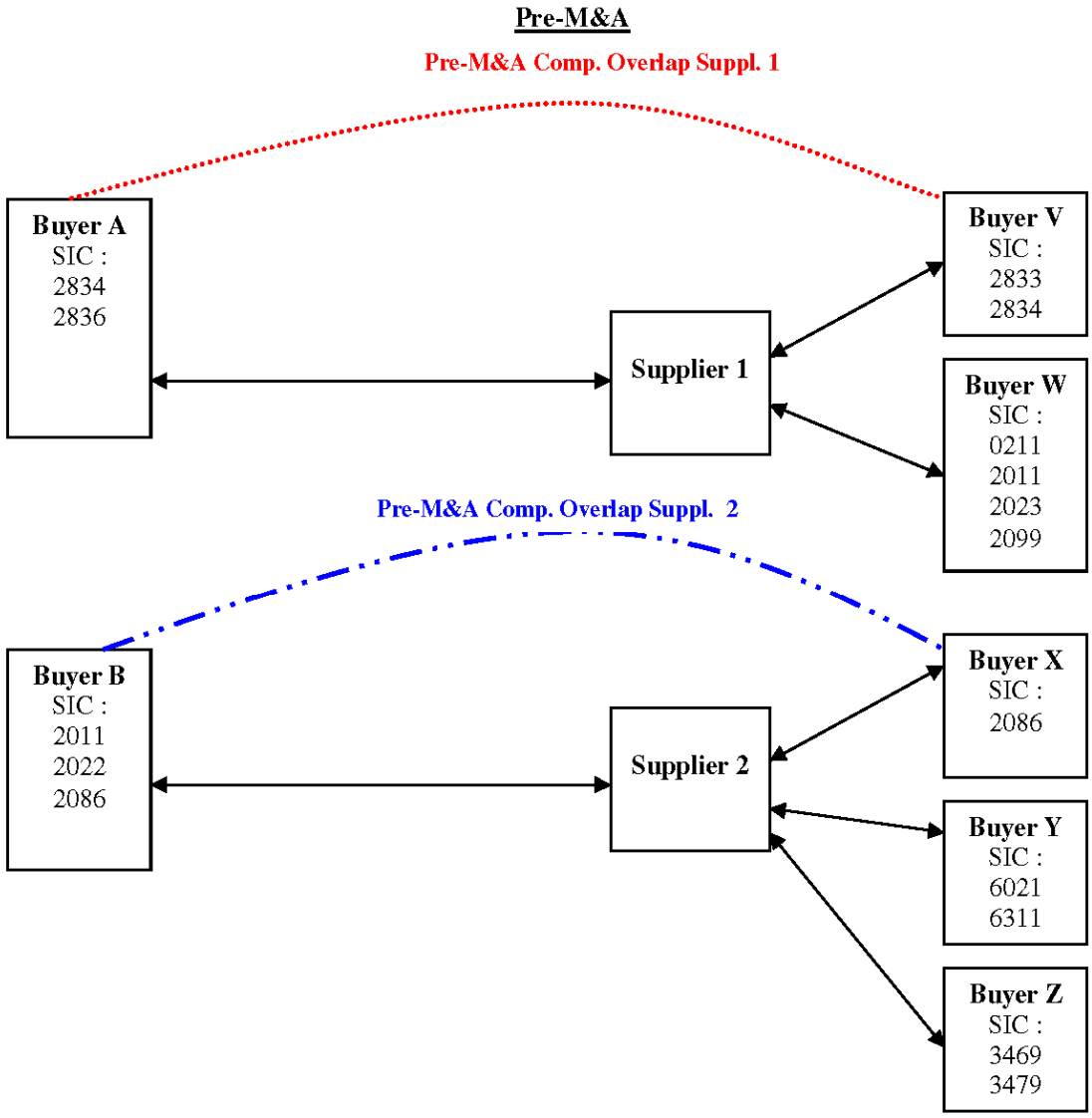
Appendix 1

Figure 1: Effect of M&As on competitive overlap (buyer perspective)

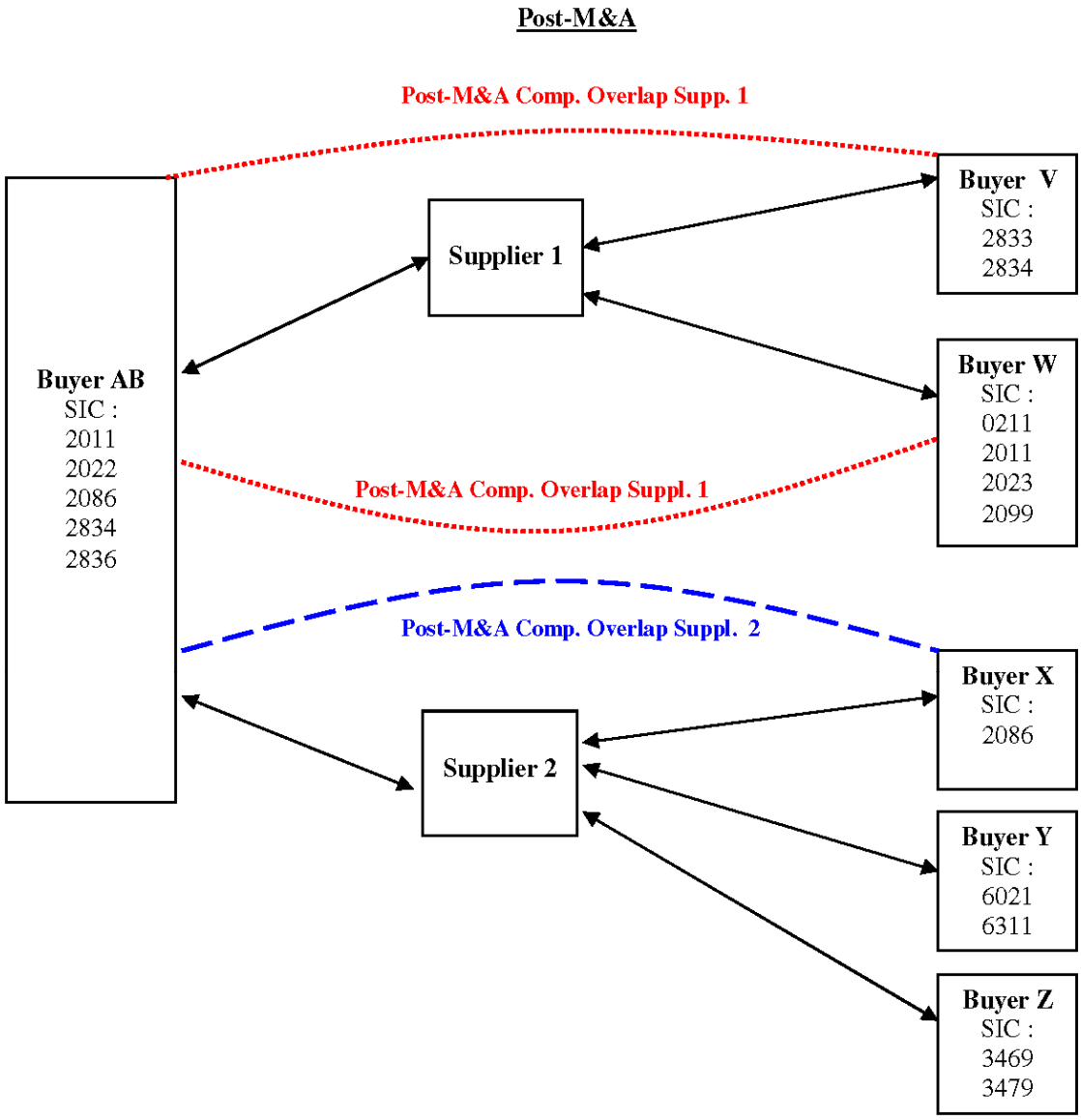


Competitive overlap= Sum of Degree of overlap in each SIC code/Total number of SIC codes that overlap
Buyer A pre-M&A overlap with Supplier = 2/1
Buyer B pre-M&A overlap with Supplier Y=1/1
Buyer AB post-M&A overlap with supplier X=5/2
Buyer AB post-M&A overlap with supplier Y=3/2

Figure 2: Effect of M&A on competitive overlap (supplier perspective)



Pre-M&A overlap = Number of buyers in supplier portfolio that overlap/total number of (other) buyers
Supplier 1 pre-M&A overlap=1/2
Supplier 2 pre-M&A overlap=1/3



Post-M&A overlap = Number of buyers in supplier portfolio that overlap/total number of (other) buyers
Supplier 1 post-M&A overlap=2/2
Supplier 2 post-M&A overlap=1/3

Change in competitive overlap Suppl. 1= 2/2 – 1/2 = 1/2
Change in competitive overlap Suppl. 2= 1/3-1/3=0

Appendix 2: Overview of the key concepts, their operationalization and the key literatures in which they are frequently used.

Concept	*Definition*	*References*	*Key literatures*	*Operationalization*
Inter-firm resources	Relationships between organizations and the specific skills and knowledge that develop in them, constitute valuable resources that span across firm boundaries. The resources partners possess and that firms can gain access to through collaboration.	Dyer and Singh (1998); Lavie (2006, 2008); Madhavan et al. (1998); Madhok and Tallman (1998);	IOR literature; RBV; network literature; relational view	Advertising agency-client relationships. *Source: Standard Directory of advertisers.*
Supplier-buyer tie	Type of IOR. Market-type procurement relationship in which a buyer purchases products or services from a supplier and which typically relies on competitive bidding.	Baker et al., (1998); Martin et. al (1995)	Supplier-buyer relations literature; TCE; Resource dependence theory; international business literature	Advertising agency-client relationships. *Source: Standard Directory of advertisers.*
Post-M&A tie continuation	Post-M&A tie continuation reflects the buyer and supplier's decision to maintain a tie after the buyer has been involved in an acquisition.	Baker et al. (1998) ; Capron et al. (2001); Rogan (2008)	M&A literature; resource redeployment literature.	Existence of tie between focal and the target, acquirer or newly combined company after the acquisition (dummy variable which takes on the value of 1 if a tie still exists, 0 otherwise). *Source: Standard Directory of advertisers*
Competitive overlap	Competitive overlap is the degree to which a supplier's customer base includes firms that are competitors in their respective industries.	Rogan (2008)		*Buyer's perspective:* competitive overlap is operationalized as the degree of overlap in all of the focal client's SIC codes that are also represented in the agency's customer portfolio divided by the number of SIC codes that overlap. *Supplier's perspective:* Competitive overlap is operationalized as the proportion of the agency's clients that share at least one SIC code with the focal client. *Change in competitive overlap:* the difference between pre-and post-M&A competitive overlap. *Source: Standard Directory of advertisers; Compustat*

Appendix 2: Overview of the key concepts, their operationalization and the key literatures in which they are frequently used *(continued)*

Knowledge spillovers	Knowledge (about strategies, product launches, technologies, etc) spilling across organizational boundaries through common suppliers, either inadvertently or deliberately.	Alcacer and Chung (2007); Li (2002)	Location choice literature; supply chain literature	The knowledge spillover potential is proxied by the level of competitive overlap in the agency's customer base. *Source: Standard Directory of advertisers; Compustat*
Supplier quality	Supplier quality reflects its ability to achieve the goals customers impose on them.			Supplier quality is proxied by two measures: - the agency's ranking based on its total billings. - the number of awards the agency won in annual competitions for creativity and effectiveness. *Source: industry rankings published annually in Advertising Age; the Andy Awards and the Effie Award websites; Standard Directory of Advertising Agencies.*
Tie strength	Tie strength is determined by the amount of time the parties have been interacting and the attachments that evolve over time through interaction.	Fichman and Levinthal (1991); Granovetter (1973); Levinthal and Fichman (1988)	IOR literature, network literature	Tie age: the number of years between the start year of the tie and the focal year. *Source: Standard Directory of Advertisers.*
Status anxiety	Status anxiety refers to a firm's concerns about being devalued because other actors question the quality of the firm's partners.	Jensen (2006); Jensen and Roy (2008)	IOR literature, status literature	An agency's status is measured as the average position (on the ranking of the top 500 leading advertisers) of its clients. The change in status caused by the M&A is used to approximate the level of status anxiety the agency is likely to experience. *Source: Ad $ Summary leading advertisers ranking; Standard Directory of Advertising Agencies.*

Chapter 5[1]

THE PERFORMANCE IMPLICATIONS OF SUPPLIER-PORTFOLIO RECONFIGURATION

ABSTRACT

We take into account both tie formation and tie dissolution to examine how supplier-portfolio reconfiguration affects firm performance. We discuss the drawbacks and benefits of stability and churn in portfolios from different perspectives. We postulate that the effect of reconfiguration will be moderated by the size of the portfolio and the strength of the ties in the portfolio. We test our hypotheses on a sample of 1,118 firms whose portfolios of relationships with advertising agencies (suppliers) we tracked for a period of 5 years. Our results suggest that supplier-portfolio reconfiguration affects performance, but its effect is complex and contingent on the characteristics of the portfolio.

[1] This chapter is the result of joint work with Xavier Martin.

INTRODUCTION

The value firms can create through inter-organizational relations (IORs) - and the pivotal role these relations play in firms' performance and survival - has enjoyed considerable attention in the literature (Dyer and Singh, 1998; Gulati, 1998; Madhok and Tallman, 1998; Singh and Mitchell, 1996). In fact, research has increasingly started to depict IORs as resources that can contribute to the achievement of a sustainable competitive advantage, thereby extending the Resource Based View (RBV) which has traditionally focused on resources owned or controlled by the focal firm (Lavie, 2006; Wassmer and Dussauge, 2011). The RBV in its traditional sense has emphasized the importance of combining resources, rather than focusing on single resources, to gain a competitive advantage (Amit and Schoemaker, 1993; Grant, 1991). Yet, a large portion of the work focusing on IORs as resources has failed to take into account that in many instances firms maintain multiple IORs at the same time, which together make up the inter-firm resources that have the potential to lead to value creation and achievement of a competitive advantage (Lavie, 2006; Wassmer, 2010; Wassmer and Dussauge, 2011). Focusing on single IORs only offers a partial account of the role inter-firm resources play in achieving organizational success.

Consequently, recent literature has started to redirect its focus to the portfolio level of analysis, particularly in the context of alliances (e.g., Lavie and Miller, 2008; Reuer and Ragozzino, 2006). Research in this area has examined the emergence, configuration and the management of alliance portfolios (Baum, Calabrese and Silverman, 2000; Hoffmann, 2007; Lavie, 2007; Ozcan and Eisenhardt, 2009; Wassmer, 2010). In addition, recent work has also examined the performance implications of alliance portfolios (Lavie, 2007; Lavie and Miller, 2008).

However, the dynamics that emerge in these portfolios over time have been left relatively unexplored (Ozcan, 2007; Wassmer, 2010). Research on the evolution and dissolution of inter-organizational relations has predominantly focused on the dyadic level of analysis (e.g., Ahuja, Polidoro and Mitchell, 2009; Baker, Faulkner and Fisher, 1998; Pangarkar, 2009), and research on these dynamics at the portfolio level is very sparse. Moreover, the work focusing on changes in IOR portfolio configurations has predominantly been of a conceptual nature or case-based (Dittrich, Duyster and de Man, 2007; Hoffman, 2007; Kim, Oh and Swaminathan, 2006; Koka, Madhavan and Prescott, 2006).

It is clear that, despite the proliferating interest in inter-organizational networks and alliance portfolios, the need to empirically examine the effect of changes in inter-firm resources on firm performance remains. We contribute to this stream of work by focusing on firms' portfolios of supplier relationships, a context in which the portfolio level of analysis has been underemphasized so far. More precisely, we examine the performance implications of supplier-portfolio reconfiguration, focusing on all the relationships firms maintain concurrently with suppliers of a specific service. We go beyond the question as to whether or not reconfiguration is beneficial to performance by examining potential moderating effects. More precisely, we examine how the characteristics of portfolios affect the relationship between reconfiguration and firm performance.

THEORY

Performance Implications of portfolio reconfiguration

Recent research has highlighted the positive effects of alliance portfolios on a variety of outcomes, such as innovative performance, value creation and overall firm

performance (Baum, Calabrese and Silverman, 2000; Lavie, 2007; Ozcan and Eisenhardt, 2009). In addition to these recent findings in the context of alliances at the portfolio level of analysis, there is ample evidence at the dyadic level that strong supplier-buyer relationships have the potential to improve both the buyer and the supplier's performance (Kotabe et al., 2003). Extending and combining these findings, we argue that a firm's portfolio of supplier relationships will impact its performance. The configuration of the portfolio will determine the costs and benefits that are associated with its management. More precisely, it will determine the complexity and costs of managing the relationships, the quality, quantity and diversity of information and resources that are available to the focal firm, the level of dependence on specific partners, as well as potential redundancy and conflict in the portfolio (Baum, Calabrese and Silverman, 2000; Hoffmann, 2007; Wassmer, 2010).

Despite the static perspective taken in a lot of the IOR portfolio research, portfolio configurations may change over time, either as a result of deliberate actions taken by the focal firm, or as a result of factors outside of its control. Yet, extant literature has failed to examine how these changes in portfolio configuration affect firm performance (Kim et al., 2006). We start off by discussing the benefits and drawbacks of relationship stability and change, drawing on a variety of perspectives.

By extending the RBV, the relational view has argued that firms can obtain significant benefits from the development of relation-specific assets and knowledge sharing routines in IORs (Dyer and Singh, 1998). These assets and routines generally develop over time and through interaction, suggesting that developing stable ongoing collaborations are particularly conducive for their development. Accordingly, several studies found that relationship stability is associated with increased commitment and the

development of relation-specific assets, which in turn lead to increased efficiency and performance improvements (Anderson and Weitz, 1992; Asanuma, 1989; Kotabe et al., 2003). The development of these relation-specific assets has the potential to increase joint dependence, i.e., both parties' reliance on the relationship and each other. Building on resource dependence theory, Gulati and Sytch (2007) argued that joint dependence, in turn, leads to performance improvements in supplier-buyer ties. In addition, Lorenzoni and Lipparini (1999) argued that over time relationships with suppliers become more stable as trust starts to emerge, resulting in a reduction in coordination and transaction costs and increased levels of innovation. Stability may also provide buyers with the reputation of preserving long-term relationships with suppliers, which fosters suppliers' cooperation (Lazzarini, Miller and Zenger, 2008; Podolny and Page, 1998). In short, relationship stability has often been associated with performance improvements.

Nevertheless, others have focused on the detrimental side of relationship stability and the benefits of change. Despite the benefits described above, very high levels of joint dependence can actually act as constraints to exchange partners (Gulati and Sytch, 2007). Maintaining long-term relationships can cause firms to become too dependent on partners, creates overembeddedness, and increases the risk of firms missing out on novel opportunities and valuable information (Baker, 1990; Hansen, 1999; Rindfleish and Moorman, 2001; Uzzi, 1996). In line with this, research on the dark side of social capital, for example, has suggested that strong, cohesive bonds may prevent individuals or firms from making the necessary adjustments to changes in their environments (Gargiulo and Benassi, 1999). Despite the need to adjust IORs to changes in the environment to ensure that the firm continues to have access to the resources it requires, achieving change in inter-organizational relations is often challenging as these relationships are subject to

inertial forces (Kim et al., 2006). Firms that are able to pursue change in their IORs may be at an advantage over those with stable IOR portfolios as they are better able to adapt their resources to changes in the environment, which is of vital importance to firms (Augier and Teece, 2009; Teece, 2007; Zott, 2003).

Accordingly, we have no theoretical grounds to believe that the effect of portfolio reconfiguration will be uniformly positive or negative. In fact, this suggests that the effect of change or stability will be contingent on a number of other factors. We expect the effect of portfolio reconfiguration to be contingent on the type of change that occurs and the characteristics of the portfolio, which stand to impact the level of dependence on partners, the information available to them and the relation-specific assets that are available to the partnering firms, amongst other things (e.g., Baker, 1990).

Based on previous IOR research at the dyadic and network levels of analysis, we opted to focus on the size and the relational dimensions, which can be altered by tie addition and by tie deletion (Wassmer, 2010). The size of the portfolio, i.e., the number of ties a firm maintains in a specific portfolio, has important implications for both the benefits the firm can accrue through the portfolio and the costs it will incur. In the context of R&D collaborations, previous research has linked the number of collaborations that a firm pursues to various performance related outcomes, such as innovative output (e.g., Deeds and Hill, 1996; Shan, Walker and Kogut, 1994). In the context of supplier-buyer ties, several scholars have argued that the number of supplier ties that a firm maintains has a bearing on the level of dependence of the buyer on the suppliers, the level of competition between suppliers, and the complexity and cost of managing the portfolio, amongst other things (e.g., Baker et al., 1998; Broschak, 2004). Yet, there is little consensus on how exactly portfolio size and changes in size affect performance, particularly in the context of

supplier tie portfolios. The importance of relationship characteristics, and relationship strength in particular, has also been well established at the dyadic and network levels of analysis (e.g., Capaldo, 2007; Dhanaraj et al., 2004; Kotabe et al., 2001), but the implications of changes in these relational features at the portfolio level have been largely ignored. Consequently, we focus on the size and relational dimensions of portfolios when examining the effect of reconfiguration on performance.[2]

The Role of Portfolio Size

In the context of alliances, evidence on the effect of portfolio size on performance has been mixed (Wassmer, 2010). Some scholars found that having more direct links improves innovative output (e.g., Ahuja, 2000a), while others argued that it is not only the number of links that affects performance but also the efficiency of the portfolio or the network (e.g., Baum, Calabrese and Silverman, 2000). Increasing the number of ties in a portfolio can significantly reduce the efficiency of a portfolio as it increases the complexity and coordination costs. In addition, expanding portfolio size also increases potential partner redundancy (Baum, Calabrese and Silverman, 2000). Moreover, the formation of new supplier ties, particularly if they create redundancies in the portfolio, triggers reactions amongst incumbent suppliers (Gadde and Mattson, 1987; Lazzarini and Zenger, 2007). For example, incumbent suppliers may lose their exclusivity status or perceive the increased competition between suppliers in the buyer's portfolio as a sign of distrust and

[2]We recognize that there are additional dimensions that we could be focusing on, such as the structural and partner characteristics of the portfolio (Wassmer, 2010). However, the structural dimension, which pertains to portfolio breadth and the redundancy in the portfolio, is less relevant than the dimensions we focus on in our context. By focusing on the portfolio of ties a firm has with suppliers of a given service, rather than the portfolio of all the supplier relations it has for all inputs, or its entire system of IORs, the breadth of the portfolio becomes less relevant. Moreover, the redundancy of the portfolio is also captured by the size dimension in this case. Although the partner dimension certainly remains valid in this context, focusing on this dimension would require fine-grained data on characteristics of the partners, which unfortunately we do not have at our disposal.

consequently, reduce their commitment to the buyer (Anderson and Weitz, 1992). To summarize, a change in supplier portfolio size affects the costs of managing the portfolio, its efficiency and suppliers' commitment. The effect of these changes will be contingent on the pre-reconfiguration size of the portfolio. On the one hand, a firm with a small portfolio in which the suppliers are not able to fully meet the buyer's demands may in fact benefit from the addition of one or more suppliers, but they would be harmed by tie deletion. The addition of ties may also offer firms more switching opportunities between its incumbent suppliers and may reduce their dependence on any single supplier. On the other hand, the effects of an increase in portfolio size will be very different for a firm that already has a large portfolio, and is consequently faced with the accompanying costs and complexities of managing a large number of supplier ties. These firms may in fact benefit from reconfiguration that leads to a reduction in portfolio size. Hence we postulate:

Hypothesis 1: The effect of portfolio reconfiguration on firm performance will be moderated by the size of the portfolio prior to reconfiguration.

The Role of Tie Strength

Next we focus on the relational dimension of portfolio configurations, of which tie strength is an important aspect (Wassmer, 2010). At the dyadic level, a lot of attention has been devoted to the benefits and drawback of strong and weak ties. In addition, alliance portfolio research has recognized the importance of tie strength in assessing the benefits that firms derive from alliance portfolios (Wassmer, 2010). Weak ties are often used to provide access to new opportunities and maintain flexibility, while strong ties are often associated with higher levels of commitment, trust and the development of relation-specific assets (Hansen, 1999; Gulati, 1995; Mizruchi and Stearns, 2001; Rindfleish and

Moorman, 2001). Lazzarini and Zenger (2007) emphasized the need for firms to foster churning in tie portfolios - thereby adjusting the tie strength in their portfolio - in order to capture the benefits of both weak and strong ties.

Nevertheless, achieving churn may come at a cost. More precisely, when attempting to achieve change in IORs, firms may "set back the liability of newness clock", which will negatively affect performance in the short run (Kim et al., 2006:716). In other words, change in portfolios with strong ties may lead to the destruction of the relation-specific assets that have developed in those ties over time as a result of the emergence of idiosyncratic interaction routines that allow for more effective communication and collaboration. This is particularly problematic as these assets are often associated with efficiency and performance improvements for both the suppliers and the buyers (Fichman and Levinthal, 1991; Kotabe et al., 2003; Levinthal and Fichman, 1988). Hence, achieving reconfiguration through tie deletion will have a negative effect on firm performance if the portfolio contains strong ties, as it will lead to the destruction of the relation-specific assets that have developed over time. However, the addition of new ties to a portfolio of strong ties, may help firms achieve the necessary balance between weak and strong ties (Uzzi, 1996). Hence, we expect the performance consequences of portfolio reconfiguration to differ depending on the strength of the ties in the portfolio.

Hypothesis 2: The effect of portfolio reconfiguration on firm performance will be moderated by the strength of the ties in the portfolio.

METHODS

Data and Sample

In order to test our hypotheses we focus on the relationships firms maintain with advertising agencies, which constitute important service suppliers. Advertising ties are of substantial importance to clients and decisions pertaining to these relationships may even affect the value of the firm, as the onset of a new agency-client relationship leads to negative stock market reactions (Mathur and Mathur, 1996). In addition, advertising affects the image of the firm and its products or services, its brand equity, and it sales (Dekimpe and Hannsens, 1995; Jones, 2007; Kim, 1993). In addition, agency-client relationships usually entail no more than a 90-day notice for cancellation, making reconfiguration a feasible option (Horsky, 2006). In short, these relationships are important to firms, reconfiguration can be achieved in a relatively short time span and is likely to affect performance, making this an ideal setting to study the effects of supplier portfolio reconfiguration.

Our unit of analysis is the portfolio of relationships firms maintain with advertising agencies, i.e., all the relationships they have in a given year. Data on supplier-buyer (agency-client) ties was obtained from *The Standard Directory of Advertising Agencies* and *The Standard Directory of Advertisers*, also known in the industry as *The Red Books.* This directory provides a comprehensive listing of U.S. advertising agencies and their clients and has been published on an annual basis for the past 80 years. It contains detailed information on advertising agencies and on advertisers, including account information, specialization of the agency, core business of the advertisers, contact information on key agency personnel, ownership details, and the number of employees. These data have been used successfully in several past studies (e.g., Baker et al., 1998; Broschak, 2004).

Moreover, the richness of the data ensures us that we capture all relationships firms have with agencies at a given point in time. This allows us to get a complete picture of the firms' supplier (agency) portfolios on a yearly basis.

We use a sample of 1,118 North American firms from a variety of industries listed in the Standard Directory of Advertisers.[3] We restricted our sample to firms for which we were able to track the start dates of the relationships they reported in 1994, which is essential to examine the relational dimension of the portfolio.[4] Subsequently, we tracked these firms from 1994 to 1999 to determine their portfolios of agency ties, providing us with a panel data set.

We collected performance data from the Thomson Financial Datastream and from Compustat North America databases. In addition, we collected information on the firms' M&A activity in the focal time period from the Thomson Financial Security Data Corporation (SDC) database.

For a number of clients performance data was not available, or we could not observe the portfolio's configuration for more than one year - thereby preventing us from examining the changes in the portfolio. These firms were excluded from our sample, reducing our sample size to 2,633 firm-year records.

[3] Information on these companies and their advertising agencies was collected in light of a series of studies focusing on the determinants of supplier-buyer tie continuation. More detailed information on the selection criteria is available in Chapters 3 and 4. The focal sample also contains a set of companies comparable to those included in Chapter 4 in terms of size and industry, but which were not involved in acquisitions. As a result, the sample contains companies from a wide variety of industries, varying in size and along other dimensions, for which we control to the extent possible.

[4] Despite the comprehensiveness of the directories, tracking relationships and firms is sometimes complicated by the fact that firms change names, ownership, or the level at which they report their advertising agencies in the directory. Although in most cases we were able to overcome these difficulties, in some instances it was impossible to find the focal company or be certain that we were tracking the right company. The absence of a company from the directory in a given year can also reflect the fact that the firm didn't meet the criteria to be included in the directory, i.e., spending a minimum of $200,000 on national or multi-state advertising in a given year.

Dependent Variable

We used Return on Sales (ROS) as our primary indicator of firm performance. We deem ROS to be particularly suitable as a dependent variable for our purpose as it takes into account both the potential cost and revenue effects of portfolio reconfiguration. Ample research has examined how advertising affects sales (e.g., Dekimpe and Hannsens, 1995; Jones, 2007; Kim, 1993). Most of the early research in this area examined the effect of advertising expenditures on sales (e.g., Assmus, Farley and Lehmann, 1984; Clarke, 1976; Dhalla, 1978). Yet, changing the level of advertising expenditure is not the only way to alter sales, changes in advertising copy and quality also influence sales and profitability (Jedidi et al., 1999). Hence, changes in advertising agency-client relationships are often made to obtain different perspectives and improve quality, with the underlying goal of increasing sales, but also potentially to affect advertising costs. ROS captures the effects of these changes. We measured ROS at different time intervals as we expect the impact of the different aspects of reconfiguration to vary in the time frame they need to materialize. For example, tie deletion will have a relatively quick impact on performance, as a result of the immediate cost cutting effects, while the effect of the addition of new ties will need more time to materialize. More precisely, industry experts claim it takes new agencies about three to six months to establish a sound relationship with the client and familiarize themselves with the company and its products, and the results will start to show after this familiarization period (Parekh, 2010).

Independent Variables

Firms can achieve reconfiguration in their supplier portfolios in several ways, i.e., by adding ties, by eliminating ties or a combination thereof. Hence, we constructed several measures each capturing a different element of portfolio reconfiguration. We distinguished

between the addition and deletion of ties as vehicles to achieve reconfiguration. We constructed a measure of the *gross number of ties deleted* and the *net number of ties deleted* (i.e., deleted and not replaced by a new supplier). We build similar measures for the *gross number of ties added* and the *net number of ties added.*

For the interaction effects with *portfolio size* we use the number of ties per thousand employees the firm had prior to the reconfiguration taking place. We chose to use a measure that takes into account the size of the firm as well as the size of the portfolio to avoid confounding the effect of portfolio size with that of firm size. For the interaction effect with tie strength, we use the age of the ties in the portfolio as a measure of their strength. We recognize that prior duration is only one of multiple factors that contribute to tie strength (Granovetter, 1973). Unfortunately, our data does not allow us to further refine this measurement by looking at for example intensity of interaction or the level of reciprocity in the relationship (Granovetter, 1973). We focus on duration as an indication of tie strength as previous research has shown that over time relation-specific assets develop in supplier-buyer ties which foster collaboration and increase the strength and stability of the relationship, thereby reducing the likelihood of tie dissolution (Fichman and Levinthal, 1991; Kotabe et al., 2003; Levinthal and Fichman, 1988).[5] For our interaction with strength of the ties in the portfolio, we use the *average age of portfolio ties* and interact it with the measures of *tie addition* and *tie deletion*, respectively.

Control Variables

We control for *firm age* as well as *firm size*, which we approximate by the number of people employed in the firm. At the supplier-portfolio level we control for the *average age*

[5] Moreover, the results of Chapter 4 show that duration also improves the likelihood of a tie being maintained post-M&A. Hence, duration is associated with the ability to overcome major changes, which in turn can be seen as an indication of tie strength.

of ties in the portfolio in the focal year. In some cases firms rely on an in-house advertising agency, either as a sole provider of advertising services or in combination with external agencies. We included a dummy variable which takes on the value of one if the *in-house agency* is the only agency they maintain in a given year.[6] In order to capture any performance effects of the occurrence of an M&A in the focal firm, we include a dummy which takes on the value of one if an *acquisition* took place in the year prior to the focal year. Since ROS may vary considerably across industries, we also control for the average ROS of the focal firm's primary industry. Finally, we include a *lagged value of performance (ROS)* in all our models.

Analysis

Given the nature of our data, i.e., its panel structure, we used a Hausman test to determine whether fixed- or random-effects models should be used (Greene, 2008). This test showed that fixed-effect models are the most appropriate. Hence, we tested our hypotheses by means of ordinary least squares regressions for panel data with firm fixed-effects. We used robust Huber-White standard errors in all our models.

We took several measures to alleviate concerns about reverse causality. Firstly, our independent variables are lagged. Secondly, we include a lagged dependent variable in all our models. Finally, we tested for so-called Granger Causality, i.e., whether lagged values of x_t have explanatory power in a regression of a variable y_t on lagged variables of y_t and x_t (Greene, 2008). Hence, to establish potential reversed causality, we examine whether lagged values of performance explain reconfiguration. We do not find any evidence of reversed causality, i.e., changes in performance driving portfolio reconfiguration, through

[6] This does not preclude the possibility that the client changes between in-house and external agencies over time, or adds external agencies to their own in-house agency. We return to this issue in the additional analyses.

this test. Although a Granger causality tests does not definitively establish cause and effect, we feel that these results in combination with the other measures we took, reduce the likelihood that we are in fact observing the effects of reversed causality.

RESULTS

Descriptive statistics and correlations for clients and tie portfolios can be found in Table 1. On average, firms have 1.93 ties in their portfolio. The average tie age in the portfolios is 5.80 years. The average Return on Sales is 11.40%.

Table 1: Summary statistics and correlations

		Mean	S.D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1.	Port. Size (# ties)	1.93	2.52													
2.	Gross # ties deleted	0.44	1.17	.37												
3.	Gross # ties added	0.50	1.32	.64	.36											
4.	Net # ties deleted	0.14	0.77	.20	.83	.05										
5.	Net # ties added	0.23	1.08	.54	.02	.87	-.04									
6.	Proportion of old to new ties	0.28	0.79	.34	.05	.04	.06	.05								
7.	Av. tie age	5.80	5.43	-.06	-.15	-.19	-.03	-.10	.52							
8.	ROS	11.40	12.67	.07	.03	.04	.02	.04	.03	-.01						
9.	Industry average ROS	5.07	19.85	.06	.03	.04	.02	.04	.05	.00	.31					
10.	Sales $/Ad$	88.90	208.09	-.18	-.10	-.11	-.07	-.09	-.13	-.04	-.06	-.04				
11.	# employees (x1000)	20.76	141.49	.08	.20	.20	.03	.16	.18	-.01	.01	.06	-.11			
12.	Inhouse port.	0.27	0.44	-.23	-.14	-.16	-.10	-.13	-.17	.11	-.11	-.10	.27	-.05		
13.	Acq in t-1	0.13	0.33	.07	.05	.16	.03	.15	-.02	-.02	.01	-.01	.01	.00	.02	
14.	Firm Age	65.54	42.33	.19	.13	.11	.10	.09	.12	.06	.14	.16	.01	.04	-.12	.01

Before testing our hypotheses, which predict interaction effects between reconfiguration and the characteristics of the portfolio, we test for direct effects of reconfiguration. We fail to find evidence of any direct effects, suggesting that as we postulated, the effect of reconfiguration on performance is not uniform.

Tables 2 and 3 provide a summary of the results for Hypothesis 1. The F-statistics show that the models are significant relative to an intercept-only model. To verify that multicollinearity is not a problem we checked the variance inflation factors of our independent variables. These factors are all well below 10, thereby alleviating concerns about multicollinearity (Neter et al., 1996).

As we expect the impact of reconfiguration to differ over time, we performed our analyses on ROS at time t and at time t+1. Hence, we will discuss the results for both these windows. In our base models (Model 1 in Table 2 and Model 6 in Table 3 for time t and t+1, respectively), we observe a marginally significant negative effect of firm size (at t+1) and a positive effect of industry average ROS on firms' ROS (at t).

We first examined the interaction between tie addition and portfolio size. When we looked at the gross number of ties that were added to the portfolio, regardless of whether or not they replaced dissolved ties, we found that tie addition has a positive effect on ROS but this effect is moderated by portfolio size (Model 2, Table 2 and $p<0.01$ in Model 7, Table 3). Bringing new suppliers into the portfolio could render the portfolio more complete. Yet, when the firm already has a large portfolio, adding new ties may reduce the efficiency of the portfolio as a result of more redundant ties. Our results suggest that the potential benefits of adding new ties to the portfolio needs some time to materialize as the effect is not significant in the immediate aftermath of reconfiguration.

Table 2: Hypothesis 1 (ROS at time t)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	ROS t									
Constant	6.40		5.19		5.30		5.59		5.45	
	(5.99)		*(6.80)*		*(6.81)*		*(6.85)*		*(6.84)*	
Port. Size	0.15		0.12		0.11		0.09		0.11	
	(0.25)		*(0.23)*		*(0.23)*		*(0.23)*		*(0.23)*	
Av. tie age	-0.03		-0.01		-0.02		-0.03		-0.02	
	(0.03)		*(0.05)*		*(0.04)*		*(0.04)*		*(0.04)*	
#empl (log)	0.05		0.33		0.32		0.30		0.31	
	(0.66)		*(0.73)*		*(0.73)*		*(0.73)*		*(0.73)*	
Firm age	0.00		0.00		0.00		0.00		0.00	
	(0.01)		*(0.01)*		*(0.01)*		*(0.01)*		*(0.01)*	
Inhouse port.	0.09		0.13		0.15		0.14		0.12	
	(0.56)		*(0.55)*		*(0.55)*		*(0.55)*		*(0.55)*	
Acq in t-1	-0.15		-0.13		-0.13		-0.07		-0.08	
	(0.32)		*(0.36)*		*(0.36)*		*(0.36)*		*(0.36)*	
Av. industry ROS	0.04	*	0.04	*	0.04	*	0.04	*	0.04	*
	(0.02)		*(0.02)*		*(0.02)*		*(0.02)*		*(0.02)*	
ROS (t-1)	0.38	***	0.28	***	0.28		0.27	***	0.27	***
	(0.08)		*(0.09)*		*(0.09)*		*(0.09)*		*(0.09)*	
Gross # ties added			0.11							
			(0.09)							
Gross # ties added X Port Size			-0.06							
			(0.05)							
Net # ties added					0.14					
					(0.09)					
Net # ties added X Port Size					-0.09	*				
					(0.04)					
Gross # ties deleted							-0.13			
							(0.08)			
Gross # ties deleted X Port Size							0.12			
							(0.14)			
Net # ties deleted									-0.19	
									(0.14)	
Net # ties deleted X Port Size									0.13	
									(0.13)	
R^2	0.78		0.75		0.75		0.75		0.75	
F	4.99	***	1.90	*	2.19	*	2.07	*	2.03	*
N	2565		2009		2009		2009		2009	

*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1
Standard errors are in parentheses

Table 3: Hypothesis 1 (ROS at time t+1)

	Model 6		Model 7		Model 8		Model 9		Model 10	
	ROS t+1									
Constant	21.34	***	21.91	**	22.11	***	22.31	***	22.21	***
	5.89		6.90		6.85		6.83		6.86	
Port. Size	-0.20		-0.28		-0.35		-0.35	†	-0.26	
	0.24		0.22		0.23		0.20		0.18	
Av. tie age	0.14		0.26	†	0.26	†	0.27	*	0.26	*
	0.09		0.14		0.14		0.13		0.13	
#empl (log)	-1.10	†	-1.23	†	-1.26	†	-1.29	†	-1.27	†
	0.62		0.73		0.72		0.72		0.72	
Firm age	0.00		0.02		0.02		0.02		0.02	
	0.01		0.02		0.02		0.02		0.02	
Inhouse port.	-0.66		-0.45		-0.44		-0.41		-0.44	
	0.73		0.77		0.77		0.78		0.78	
Acq in t-1	0.04		0.41		0.43		0.43		0.43	
	0.35		0.40		0.40		0.41		0.40	
Av. industry ROS	0.05	**	0.05	*	0.05	*	0.05	**	0.05	*
	0.02		0.02		0.02		0.02		0.02	
ROS (t-1)	-0.01		-0.13		-0.13		-0.13		-0.13	
	0.07		0.10		0.10		0.10		0.10	
Gross # ties added			0.06							
			0.08							
Gross # ties added X Port Size			-0.16	**						
			0.06							
Net # ties added					0.08					
					0.08					
Net # ties added X Port Size					-0.26	***				
					0.04					
Gross # ties deleted							-0.11			
							0.08			
Gross # ties deleted X Port Size							0.40	***		
							0.06			
Net # ties deleted									-0.12	
									0.11	
Net # ties deleted X Port Size									0.39	***
									0.05	
R^2	0.00		0.05		0.08		0.08		0.08	
F	1.96	*	3.10	***	13.93	***	5.84	***	13.67	***
N	2397		1885		1885		1885		1885	

*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1

To determine whether this effect is due to the effect of rejuvenation of the portfolio or the expansion of the portfolio, we subsequently looked at the *net* number of ties added and its effect on performance (Model 3, Table 2 and Model 8, Table 3). The coefficient of

the interaction between portfolio size and net number of ties added is negative and significant ($p<0.05$ in Model 3, $p<0.001$ in Model 8). Hence, the findings are consistent with those for the gross number of ties added. Hence, expanding a portfolio by adding ties could be detrimental for performance if the firm already has a large portfolio in place, as shown in Figures 1a-c. This suggests that the cost of managing extra ties is an important factor to take into account when considering portfolio reconfiguration.

Figure 1a: Interaction effect between net ties added and portfolio size (ROS at t)

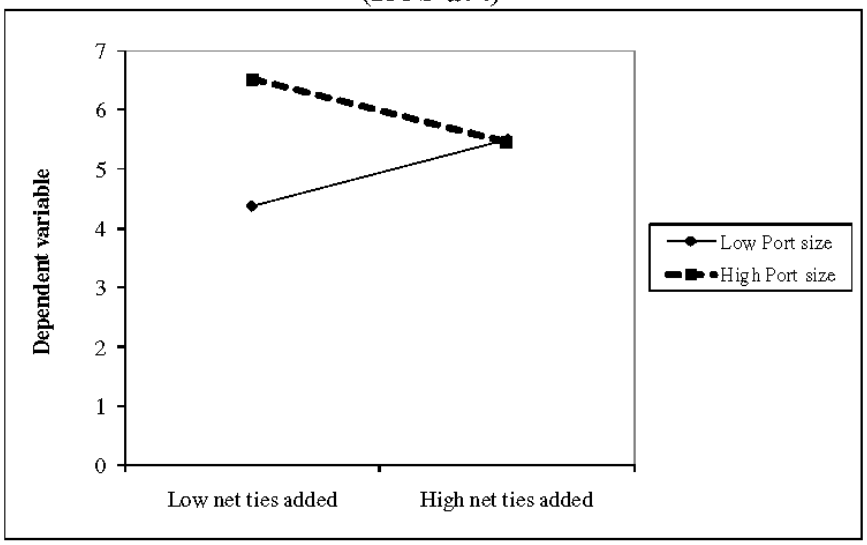


Figure 1b: Interaction effect between gross ties added and portfolio size (ROS at T+1)

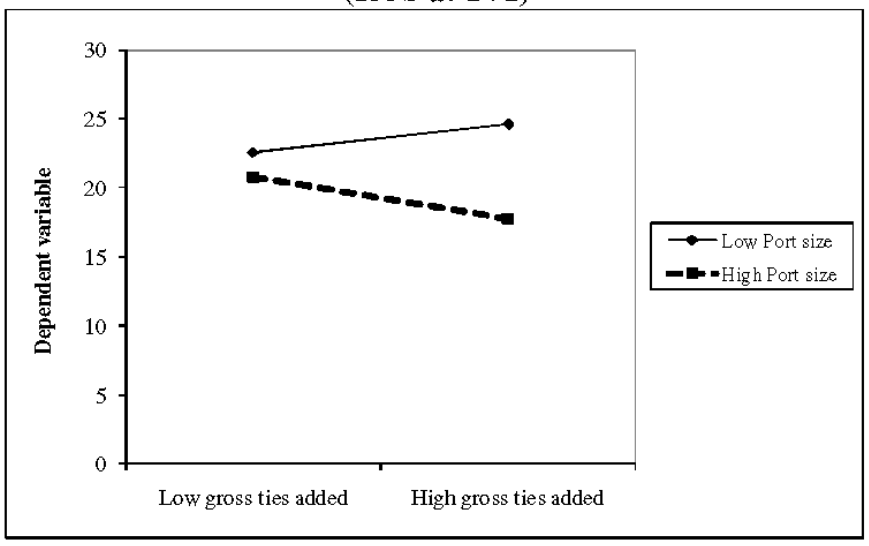
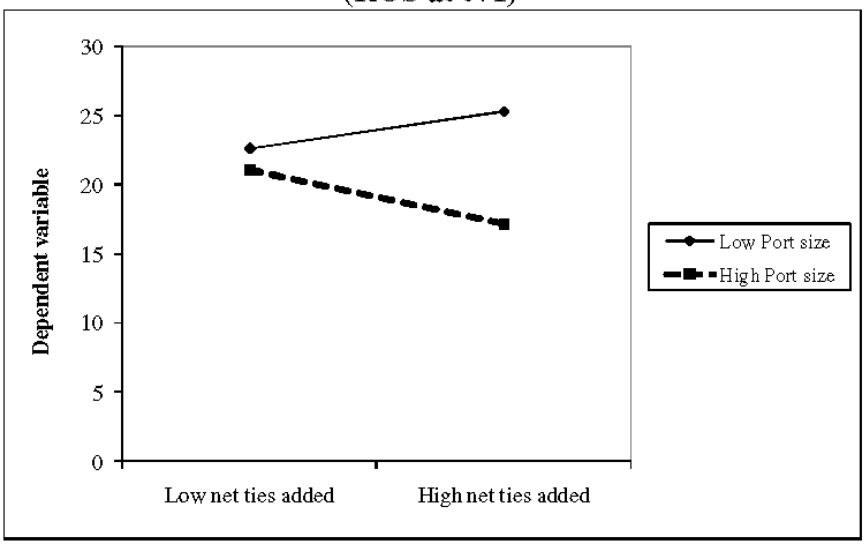


Figure 1c: Interaction effect between net ties added and portfolio size (ROS at t+1)



Meanwhile, as shown in Models 4 and 9, the gross number of ties deleted has a negative effect on performance, but this effect is moderated by portfolio size. This effect only becomes significant at time t+1 ($p<0.001$ in Model 9, Table 3), but is consistent over time. When we restrict our analysis to ties that are deleted but not replaced, i.e., the net number of ties deleted, we observe the same effect. Hence, as Figures 2 a-b show, the deletion of ties deteriorates performance of firms with small portfolios, but improves performance for those that have large portfolios in place ($p<0.001$ in Model 10, Table 3). This negative effect for firms with small portfolios illustrates the danger of cutting into supplier portfolios, which could result into lower sales, less complete marketing programs, or lower commitment of other suppliers out of fear of being eliminated next. Firms with large portfolios may be more able to overcome these pitfalls because they have a more comprehensive portfolio to turn to, and by eliminating ties they significantly reduce the complexity and costs associated with managing a large portfolio. To summarize, we find that the effect of reconfiguration on firm performance varies both depending on the type of

reconfiguration and on the time window we focus on, but we find consistent evidence that the effect is moderated by portfolio size. Hence, we find support for Hypothesis 1.

Figure 2a: Interaction between gross ties deleted and portfolio size (ROS at t+1)

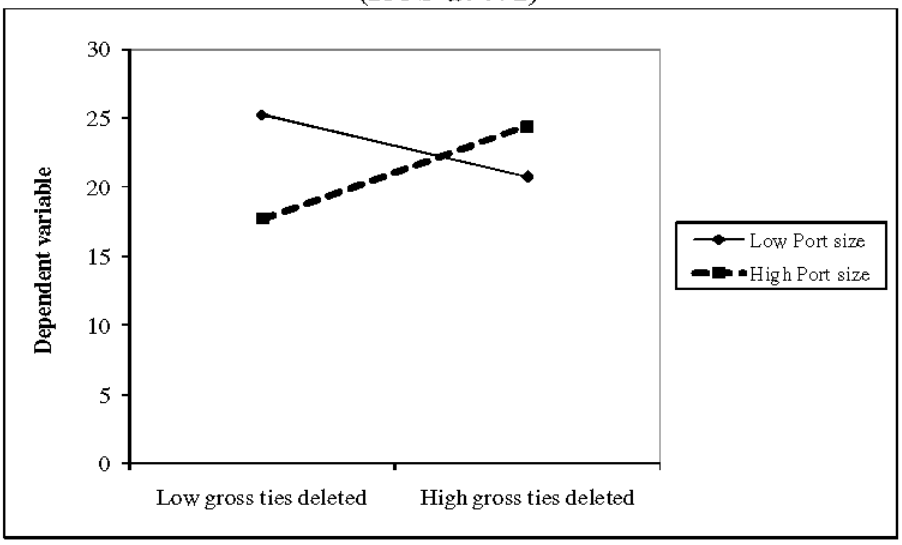
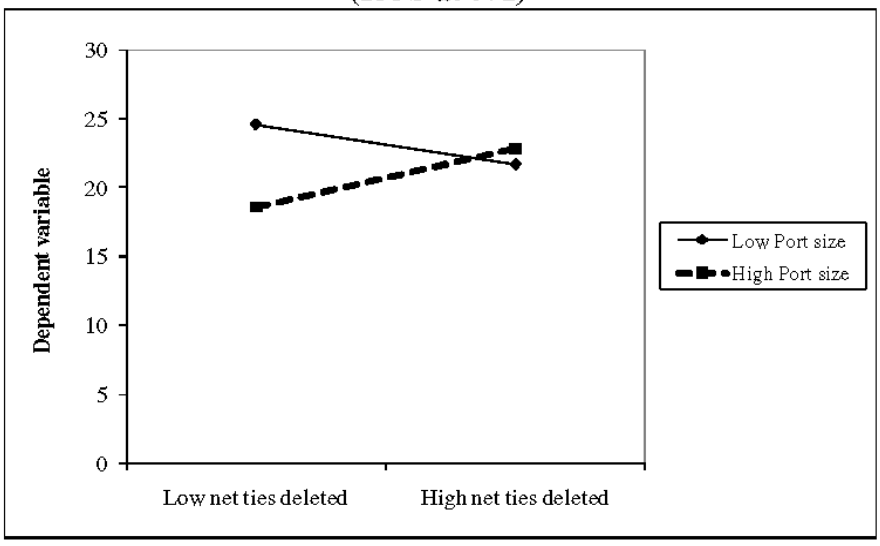


Figure 2b: Interaction between net ties deleted and portfolio size (ROS at t+1)



In Hypothesis 2 we postulated that the effect of reconfiguration is contingent on the strength of the ties in the portfolio. We examine the interaction effect between reconfiguration and the average age of the ties in the portfolio, which we use as a proxy for average tie strength in Models 11-18 (Tables 4-5).

Table 4: Hypothesis 2 (ROS at t)

	Model 11		Model 12		Model 13		Model 14	
	ROS t							
Constant	5.40		5.57		5.05		5.22	
	(7.40)		*(7.03)*		*(7.42)*		*(7.39)*	
Port. Size	0.00		0.16		0.02		0.01	
	(0.24)		*(0.22)*		*(0.24)*		*(0.23)*	
Av. tie age	0.05		-0.01		0.04		0.06	
	(0.05)		*(0.04)*		*(0.05)*		*(0.05)*	
#empl (log)	0.28		0.28		0.32		0.29	
	(0.80)		*(0.75)*		*(0.81)*		*(0.80)*	
Firm age	0.00		0.00		0.00		0.00	
	(0.01)		*(0.01)*		*(0.01)*		*(0.01)*	
Inhouse port.	0.14		0.15		0.14		0.13	
	(0.57)		*(0.55)*		*(0.57)*		*(0.57)*	
Acq in t-1	-0.17		-0.13		-0.17		-0.14	
	(0.36)		*(0.36)*		*(0.35)*		*(0.35)*	
Av. industry ROS	0.04	*	0.04	*	0.04	*	0.04	*
	(0.02)		*(0.02)*		*(0.02)*		*(0.02)*	
Lagged DV	0.26	**	0.27	**	0.26	**	0.26	**
	(0.08)		*(0.09)*		*(0.08)*		*(0.08)*	
Gross # ties added	-0.07							
	(0.13)							
Av age of ties X Gr. # ties added	0.02							
	(0.01)							
Net # ties added			0.00					
			(0.13)					
Av age of ties X # Net ties added			0.02					
			(0.02)					
Gross # ties deleted					-0.28			
					(0.20)			
Av age of ties X Gr. # ties deleted					0.05			
					(0.03)			
Net # ties deleted							-0.35	
							(0.42)	
Av age of ties X Net # ties deleted							0.06	
							(0.07)	
R^2	0.74		0.75		0.74		0.74	
F	2.24	*	1.88	*	2.37	**	2.20	*
N	2001		1999		2001		2001	

*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1
Standard errors are in parentheses

Table 5: Hypothesis 2 (ROS at t+1)

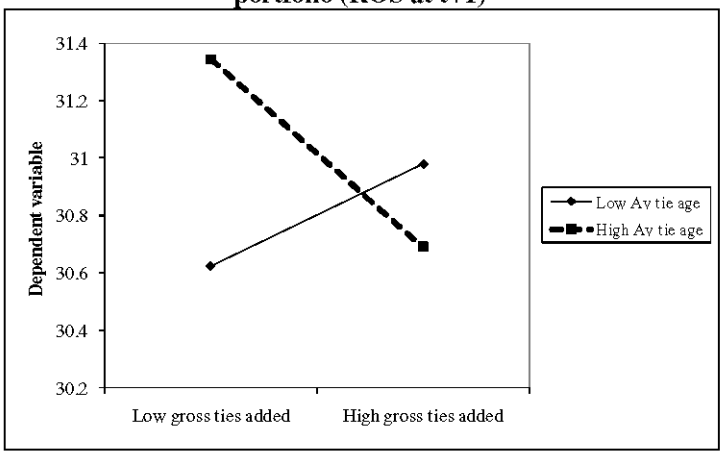
	Model 15		Model 16		Model 17		Model 18	
	ROS t+1							
Constant	30.72	***	23.01	***	31.13	***	30.88	***
	(6.64)		*(6.79)*		*(6.63)*		*(6.61)*	
Port. Size	-0.60	**	-0.28		-0.62	**	-0.61	**
	(0.19)		*(0.21)*		*(0.20)*		*(0.20)*	
Av. tie age	0.04		0.26	†	0.02		-0.01	
	(0.06)		*(0.14)*		*(0.06)*		*(0.06)*	
#empl (log)	-2.00	**	-1.36	†	-2.02	**	-1.98	**
	(0.70)		*(0.71)*		*(0.70)*		*(0.70)*	
Firm age	0.02		0.02		0.02		0.02	
	(0.02)		*(0.02)*		*(0.02)*		*(0.02)*	
Inhouse port.	-0.79		-0.46		-0.78		-0.77	
	(0.75)		*(0.78)*		*(0.75)*		*(0.75)*	
Acq in t-1	0.20		0.45		0.16		0.11	
	(0.39)		*(0.40)*		*(0.39)*		*(0.38)*	
Av. industry ROS	0.05	*	0.05	*	0.05	*	0.05	*
	(0.02)		*(0.02)*		*(0.02)*		*(0.02)*	
Lagged DV	-0.12		-0.13		-0.12		-0.12	
	(0.09)		*(0.10)*		*(0.09)*		*(0.09)*	
Gross # ties added	0.15							
	(0.15)							
Av age of ties X Gr. # ties added	-0.04	*						
	(0.02)							
Net # ties added			0.08					
			(0.13)					
Av age of ties X # Net ties added			-0.02					
			(0.02)					
Gross # ties deleted					0.22			
					(0.20)			
Av age of ties X Gr. # ties deleted					-0.04			
					(0.03)			
Net # ties deleted							-0.05	
							(0.39)	
Av age of ties X Net # ties deleted							0.04	
							(0.07)	
R^2	0.08		0.09		0.08		0.09	
F	3.65	***	2.35	**	2.88	**	2.87	**
N	1876		1875		1876		1876	

*** p < 0.001, ** p < 0.01, * p< 0.05, † p<0.1
Standard errors are in parentheses

We failed to find any significant evidence for the predicted moderating effect of average tie age on the relationship between tie addition and deletion, respectively and performance, in the immediate aftermath of the reconfiguration efforts. However, at t+1 we find evidence that the positive effect of tie addition is moderated by the average age of the ties in the portfolio (p<0.05 in Model 15,Table 5).

As Figure 3 illustrates, firms with a low average age of portfolio ties benefit from tie addition, while firms with a high average age see their performance deteriorate after tie addition. Yet, we only observe this for the gross number of ties added. Moreover, we fail to find a significant interaction between the (gross or net) number of ties deleted and the average age of the ties in the portfolio (Models 13-14, Table 4 and Models 17-18, Table 5). Summarizing these results, we only find limited evidence in support of the interaction between reconfiguration and average tie strength postulated in Hypothesis 2.

Figure 3: Interaction between gross number of ties added and average age of ties in the portfolio (ROS at t+1)



Additional Analyses

We performed several additional analyses to verify the robustness of our results and gain additional insights into the effect of reconfiguration on firm performance. Firstly, we examine the possibility that reconfiguration decisions are not random, but rather endogenous to their expected performance implications. To alleviate these concerns, we used instrumental variable (IV) regression techniques for panel data.[7] Firstly, we tested whether the different measures of reconfiguration are indeed subject to endogeneity

[7] We opted for instrumental variable methods because recent developments in this area (e.g. the xtivreg2 command in Stata developed by Schaffer (Baum, Schaffer and Stillman, 2010)) deal with the panel structure of the data more adequately than for example traditional two-stage Heckman models.

concerns (Baum, 2006). This is particularly important since using IV estimation techniques leads to a loss of efficiency, which is well warranted when OLS estimators are biased and inconsistent as a result of endogeneity but not when the explanatory variable(s) are in fact uncorrelated with the error term (Baum, 2006; Woolridge, 2009). We identified several potential instruments that impact reconfiguration but not ROS at times t or t+1, namely lagged measures of reconfiguration, history of tie addition, history of tie dissolution over the past four years, and a lagged measure of industry sales growth. We tested for the exogeneity and relevance of these instruments in all models and retained those that were both exogenous and relevant. Subsequently, we performed the Durbin-Wu-Hausman test which compares the coefficient vectors resulting from OLS and from IV estimation and provides a test statistic for the null hypothesis that the OLS estimator is consistent and fully efficient (Baum, 2006). The tests failed to identify the different reconfiguration measures as endogenous. Hence, we deem our original analyses appropriate.

In addition we re-did our analyses with an alternative dependent variable, i.e., *sales growth*, which is defined as:

$$Sales\ Growth = \left(\frac{Sales_t - Sales_{t-1}}{Sales_{t-1}} \times 100 \right) - Industry\ Average\ Sales\ Growth$$

The effect of reconfiguration on performance works through two mechanisms, i.e., (1) changes in the costs associated with the supplier ties, and (2) changes in the firm's revenues as a result of changes in its supplier ties. This alternative dependent variable will only capture the second effect, so we do not expect an exact replication of our results. We observe a negative, albeit immediate, effect of the net number of ties added on sales growth, moderated by portfolio size. However, this effect changes over time as we observe a positive effect of (both net and gross) tie addition on sales growth (at t+2), which is

moderated by portfolio size. Although the immediate effect is at odds with our findings for ROS, the longer-term effect is in line with our findings. We fail to find any evidence of the interaction between the average age of ties in the portfolio and tie addition or deletion.

Our analyses only provided limited insights into the role of the relational dimension in the relationship between portfolio reconfiguration and performance. This may be partly due to the fact that we use the average age of ties in the portfolio to get at the strength of the ties, while the balance between strong and weak ties may be more important. Hence, we constructed a measure of balance by calculating the proportion of old (strong) to new (weak) ties in the portfolio. Based on previous research and industry publications, we deemed ties that have existed for 5 years or more as old and strong ties. Subsequently, we performed a sample split based on the direction of the imbalance, i.e., whether it is imbalanced towards more old than new ties or vice versa. Since, old ties cannot be added by definition, the only way to achieve balance in a portfolio dominated by young ties would be to delete young ties. Yet, we do not find any effect of tie deletion in general (not taking into account the age of the ties deleted). Moreover, we fail to find evidence of a deterioration of performance as a result of tie addition, which aggravates the imbalance. In the subsample with portfolios that are dominated by old, strong ties we find that tie deletion has a negative effect on performance. Although this does not guarantee that the imbalance is reduced, as it does not distinguish between the deletion of old and new ties, this may suggest that the damage done by deleting ties from a strong portfolio exceeds the benefits of achieving a better balance between strong (old) and weak (young) ties.

Our sample contains a substantial number of firms that have only one supplier in their portfolio. Many of these firms change suppliers, or expand their portfolios during the period we study. Nevertheless, some firms' portfolios consist of only one, and the same, tie

throughout the entire time period. Although we believe the inclusion of these firms is imperative to understanding the performance implications of the full range of reconfiguration choices firms pursue, we recognize that this may raise concerns about the relevance of studying portfolio reconfiguration for these firms. Hence, we re-did our analyses excluding firms that maintained one tie and did not implement any type of reconfiguration throughout the entire period. The results are consistent with the results on the full sample.

Finally, we used an alternative measure of portfolio size to test the interaction with the different measures of reconfiguration. While in the main analyses we used a measure that takes into account firm size, i.e., the number of ties per thousand employees, when measuring portfolio size, we now use a simple count of the number of ties in the portfolio. The results are consistent with those presented in our main analyses.

DISCUSSION AND IMPLICATIONS

Extant research has predominantly taken a dyadic perspective when examining the effect of inter-organizational relations, and supplier-buyer ties in particular, on firm performance. In addition, the tendency has been to focus on the performance implications of IORs from a static perspective, rather than focusing on the changes in these relationships and the subsequent effects on performance. To address this void in the literature, we examined the performance implications of supplier portfolio reconfiguration. Drawing on different perspectives, we highlighted both the benefits and downsides of stability in IOR portfolios and aimed to empirically determine which effect prevails and in particular, how this depends on the characteristics of the portfolio. Previous research has

shown that supplier-buyer ties affect performance; in a service context we found that advertising agency-client relationships affect returns on sales in particular. Our results, however, showed that the effect of portfolio reconfiguration on performance is complex and depends on the dimension of reconfiguration, as well as the characteristics of the portfolio. Moreover, the immediate performance effects of reconfiguration may differ from the longer-term effects, as evidenced in our robustness checks.

This paper contributes to the literature in several ways. Firstly, our study improves our understanding of the effect of IORs, which constitute an important resource, on firm performance. In particular, by focusing on changes in these relationships, we provided insights into the risks associated with the reconfiguration of inter-firm resources. Secondly, we moved away from the dyadic level, recognizing that IORs are part of a larger system of relationships. Hence, changes at the dyadic level will have broader implications on the entire system in which the IORs are embedded. What's more, the impact of these changes will be contingent on the broader context, i.e., the portfolio, in which these relationships are engrained. Not considering the entire portfolio, may therefore distort the true implications of IOR change. Thirdly, by taking into account a firm's portfolio of supplier-buyer ties, and thereby offering a more comprehensive view of inter-firm resources, we were able to examine the effect of change along a number of dimensions that cannot be assessed by studying ties in isolation. As a result, we further our understanding of the dynamics of inter-organizational relations. Moreover, Wassmer (2010) called for longitudinal research taking both the inflow and outflow of alliances into account to gain a more comprehensive understanding of alliance portfolio evolution. Along the same vein, Lazzarini and Zenger (2007) argued that tie formation and dissolution cannot be studied in isolation in the context of supplier-buyer ties. Our study further emphasizes the need to

take into account both dynamics when studying the evolution of IOR portfolios and their performance implications. Finally, our results offer some guidelines to avoid the pitfalls of inappropriate portfolio reconfiguration and suggest that firms would benefit from developing an IOR portfolio reconfiguration capability that can help them make changes in their portfolios when necessary. Augier and Teece (2009:411) argued that the dynamic capabilities of firms constitute "the capacity to sense and seize opportunities, and then transform and reconfigure as opportunities and competitive forces dictate". Consequently, firm performance is contingent on the ability to transform and reconfigure resources configurations when necessary (Zott, 2003). Our results suggest that developing a dynamic portfolio reconfiguration capability may be instrumental in helping firms achieve the benefits of reconfiguration, while avoiding the pitfalls of making inappropriate changes to IOR portfolios.

LIMITATIONS AND FUTURE RESEARCH

Although our study has provided numerous useful insights into the performance consequences of portfolio reconfiguration, additional research is required to fully understand the dynamics and performance implications of these changes. The time frame we focus on may only give us partial insights into the consequences of reconfiguration. Focusing on the immediate effect of reconfiguration and the effect in the subsequent year showed us that the effect becomes more pronounced or may even change over time, hence additional research on the long-term effects of portfolio reconfiguration is well warranted.

We built on prior research that has suggested that portfolio size determines the cost and complexities associated with the management of portfolios, as well as the efficiency and the degree of redundancy in the portfolio (Baum et al., 2000; Wassmer, 2010). Yet, we

do not empirically assess whether changes in portfolio size also affect the redundancy in the portfolio, i.e., the number of suppliers providing the same products or services. In our setting all suppliers, broadly speaking, provide the same service, i.e., advertising related services. Nevertheless, suppliers may still vary in the exact services they provide, e.g., whether they focus on promotion, on brand building, or on general advertising, suggesting that the degree of redundancy in two portfolio of the same size may still differ. Hence, future research would benefit from examining whether the effect of tie addition and deletion on firm performance is contingent upon the level of redundancy in the portfolio. In addition, the limited effects of tie strength that we uncovered may be due to the fact that we only capture one aspect of tie strength, i.e., prior duration, while the strength of ties can also be affected by other factors such as the intensity of collaboration and communication, for example. Unfortunately, we were unable to present a more fine-grained analysis of the role of tie strength, or the relational dimension of the portfolio configuration, leaving this as an important issue to be addressed in future research.

Another limitation lies in the fact that our data did not allow us to study the changes in the partner dimension of the portfolio. As a result, we may not be capturing the full effect of changes in inter-firm resources. Some scholars have argued that inter-firm resources, or network resources as they are sometimes referred to, reside in the relationships between a firm and its partners (e.g., Dyer and Singh, 1998; Gulati, 1999). Others have suggested that the resources that the partner firms possess, and which can be accessed through the relationship, constitute network resources (e.g., Lavie, 2006). Based on the insights obtained from previous research is it likely that both have the ability to contribute to firm performance. Consequently, research would benefit from examining and comparing the respective roles of resources that develop in the relationships and the

partners' resources that can be accessed through the relationship, instead of arguing in favor of one definition over another. The examination of IOR portfolio reconfiguration can provide insights into this by simultaneously examining changes along the relational and the partner dimensions.

Another shortcoming of our study is that we focused solely on portfolio characteristics as moderators of the relationship between reconfiguration and performance. However, the effect of reconfiguration may also be contingent on firm characteristics. For example, some firms may possess skills that help them implement reconfiguration decisions more successfully. Future research may examine whether prior experience with reconfiguration, of supplier tie or other IOR portfolios, provides firms with such skills and moderates the relationship between reconfiguration and performance.

We statistically deal with the issue of endogeneity, but we do not address the causes of reconfiguration theoretically, which would be an interesting issue for future research. Firms may pursue supplier portfolio reconfiguration for a variety of reasons. For example, they may add ties to their portfolio to reduce their dependence on their incumbent suppliers and shift the power balance in the relationships. Reconfiguration may also be the result of the occurrence of a merger or acquisition. M&As are often seen as a way to reconfigure firm resources in order to achieve higher levels of efficiency or build stronger capabilities (Capron, 1999). The performance implications of M&A induced reconfiguration may therefore be very different from the consequences of, for example, reconfiguration aimed at shifting the power balance between the firm and its suppliers. Furthermore, the firm's environment may also play a crucial role in the desirability of, or even need for, portfolio reconfiguration. Reconfiguration triggered by environmental changes may have a different effect on performance than reconfiguration pursued by firms

in a stable environment. Hence, focusing on both the causes and consequences of reconfiguration would provide a more comprehensive view on the performance implications of portfolio reconfiguration.

Finally, we focused on the portfolios of ties firms maintain with suppliers of a specific service, i.e., advertising. This context provides many benefits over manufacturing settings. For example, reconfiguration may be more easily attainable in these contexts as physical asset specificity tends to be extremely low, if not non-existent, and agreements tend to be of legally open-ended nature and usually entail no more than a 90-day notice for cancellation (Horsky, 2006). We believe our results are generalizable, even though reconfiguration may be harder to achieve in other contexts. Yet, an extension of this research in a different setting may call for a focus on different aspects or dimensions of performance, such as return on assets, or product, process or lead time improvements. We would expect supplier portfolio reconfiguration to have a much stronger impact on the latter dimensions of performance than on the firm's overall bottom line. We also believe that our study provides a useful basis for future research on the reconfiguration of alliance portfolios. Yet, research on changes in alliance portfolios will have to overcome a challenge that we did not face in our setting. More precisely, the context that we focused on allowed us to study complete portfolios of ties of a specific kind, without having to make assumptions about the duration of these relationships. Research on alliance portfolios, on the other hand, often has to make assumptions about the duration of the alliances to determine the composition of the portfolio in a given year as the data sources generally used do not specify the termination date of the collaborations (e.g., Lavie and Miller, 2008; Srivastava and Gnyawali, 2010).

Appendix 1: Overview of the key concepts, their operationalization and the key literatures in which they are frequently used.

Concept	*Definition*	*References*	*Key literatures*	*Operationalization*
Supplier-buyer tie	Type of IOR. Market-type procurement relationship in which a buyer purchases products or services from a supplier and which typically relies on competitive bidding.	Baker et al., (1998); Martin et. al (1995)	Supplier-buyer relations literature; TCE; Resource dependence theory; international business literature	Advertising agency-client relations *Source: Standard Directory of Advertisers.*
Supplier-portfolio	The entire set of relationships a firm maintains with suppliers of a specific product or service.	Hoffman (2007); Wassmer (2010)	IOR literature; network literature	All the relationships a focal firm maintains with advertising agencies constitutes its supplier-portfolio. *Source: Standard Directory of Advertisers.*
Portfolio reconfiguration	Changes in the portfolio of supplier relationships that entail tie dissolution and/or tie addition.	Hoffman (2007); Wassmer (2010)	IOR literature; network literature	Portfolio reconfiguration is operationalized in several ways: - gross and net number of ties added - gross and net number of ties deleted *Source: Standard Directory of Advertisers.*
Tie strength	Tie strength is determined by the amount of time the parties have been interacting and the attachments that evolve over time through interaction.	Fichman and Levinthal (1991); Granovetter (1973); Levinthal and Fichman (1988)	IOR literature; network literature	Tie age: the number of years between the start year of the tie and the focal year. *Source: Standard Directory of Advertisers.*
Portfolio size	The number of ties in the portfolio.	Hoffman (2007); Wassmer (2010)	IOR literature; network literature; alliance literature	Portfolio size is measured as the number of advertising agency ties per thousand employees working in the client firm. *Source: Standard Directory of Advertisers.*

Chapter 6

GENERAL CONCLUSIONS

While much research on IORs has examined their antecedents and performance implications, less is known about their evolution. In addition, with a few notable exceptions, previous research has examined IORs in isolation from each other and from other strategic actions. I addressed these two issues in Chapters 2-4. In Chapter 2 I presented a review of the extant literature. The most striking gaps in the literature pertain to the interplay between different types of IORs and the effect of strategic and environmental factors on the evolution and dissolution of IORs. In the subsequent chapters I addressed some of these issues empirically. In Chapter 3, I showed that corporate development activity experience, particularly experience with alliances and equity joint-ventures, influences the stability of supplier-buyer ties. The results provide interesting insights into the interplay between IORs. In short, gaining experience with some types of corporate development activities, particularly those that can be considered to be IORs, will result in greater supplier tie stability, but the effects are not uniform across IORs. The insights gained from this study illustrate the importance of distinguishing between different types of IORs and taking their differences and similarities into account for research on experiential learning in the context of IORs.

I examined the effect of the occurrence of an M&A on supplier ties in more detail in Chapter 4. Even though the study in Chapter 3 did not find substantive spillovers from M&A experience to supplier tie stability, under certain circumstances buyer M&As should cause both buyers and suppliers to reconsider their ties. I focused on post-M&A changes in competitive overlap between the merged company and the other buyers in the focal supplier's customer base.

I analyzed the implications of changes in competitive overlap, from both the buyer's and the supplier's perspective. From the buyer's perspective, an increase in competitive overlap has a negative effect on the likelihood of tie continuation, but contrary to what I predicted, this effect is moderated by the importance of the service provided by the focal supplier to the buyer. From the supplier's perspective, the negative effect of an increase in competitive overlap on the likelihood of tie continuation is moderated by the importance of the buyer to the supplier. These results suggest that buyers are concerned about sharing a supplier with competitors, but these fears are mitigated when the buyers are in a better bargaining position and can use their power to force suppliers to put protective mechanisms in place. Suppliers seem to be driven by the fear of losing important incumbent clients as a result of competitive overlap.

In Chapter 5 I showed that the reconfiguration of supplier portfolios alters firm performance. I draw on arguments from several theoretical perspectives that have recognized the importance of IORs for firm performance, and that have argued in favor of tie stability or change, including the relational view, the resource based view, the dynamic capabilities view and resource dependence theory. Based on the insights gained through these various perspectives, I argue that portfolio reconfiguration does not have a uniform effect on performance and instead, its effect depends on the characteristics of the portfolio and type of change that is pursued. It makes a difference whether a buyer adds or drops supplier ties; furthermore, the effects of these changes are contingent on the characteristics of both the portfolio and the set of ties within it. More precisely, my results show that the effect of adding or deleting ties will depend on the size of the portfolio prior to reconfiguration and the strength of the ties in the portfolio. The positive performance implications of tie addition, and the negative implications of tie deletion are

moderated by the size of the portfolio. Furthermore, the positive effect of the addition of ties is also tempered by the average strength of ties in the portfolio

CONTRIBUTIONS

Taken together, the findings of my research offer several important contributions to the literature on IORs in general. Firstly, I have identified hitherto un-researched or under-researched drivers of relationship evolution and dissolution. By examining the interplay between different types of IORs and between IORs and M&As, I have started to tackle one of the main shortcomings of extant research, i.e., the tendency to study IORs in isolation of each other and in isolation of other strategic actions. Consequently, I contribute to the co-evolutionary perspective on IORs - which suggests IORs cannot be seen in isolation from firms' broader strategies - that has emerged over the last decade. Secondly, the explicit recognition of differences between different types of IORs in Chapters 2 and 3 makes a valuable contribution to the current literature, which has often ignored these differences thereby leading to inaccurate or contradictory conclusions (Mayer and Teece, 2008).

Thirdly, in Chapter 4, I have emphasized the need to take a two-sided view when studying IORs. Traditionally, research has examined IORs from the perspective of one of the parties involved. Although this has been a general trend, I have suggested that the implicit assumptions that drive this trend are particularly prevalent in studies of supplier-buyer ties. Most previous research has assumed that the buyers call the shots and determine when a relationship will be terminated. Consequently, relatively little is known about the implications of changes at the buyer level for the supplier's willingness to continue the relationship. In Chapter 4, I discussed both the buyer's and the supplier's incentives to keep a relationship ongoing,

particularly when changes occur in one of the organizations involved. Although I focused on supplier-buyer ties, the implications of my arguments and findings are broader. Research on all types of IORs would benefit greatly from taking a more comprehensive view incorporating the priorities of all parties in a relationship.

Fourthly, IOR research, and supplier-buyer tie research in particular, has focused predominantly on manufacturing settings. Yet, professional services are a major corporate expenditure and contribute to the achievement of competitive advantage (Baker and Faulkner, 1991). In addition, professional service settings offer an appropriate setting to test some of the determinants of tie stability, as these relationships do not entail as much physical asset specificity and it is often easier to move out of these relationships. This makes it easier to study the inter-organization factors under investigation without confounding them with the effects of specialized investments in physical assets.

In addition, the results from Chapter 3 contribute to the literature on experiential learning. Previous research in this area has predominantly examined intra-activity learning. The few studies that acknowledged the possibility of inter-activity learning focused on experience spillovers between corporate development activities (e.g., Zollo and Reuer, 2009). Hence, I extend this literature by examining in more detail the determinants of the occurrence and magnitude of experience spillovers between different types CDA and supplier-buyer ties.

Chapter 4 also makes several contributions to the M&A literature. Insofar as inter-organizational relations are often deemed to be a critical resource for firms, I contribute to the literature on post-M&A resource reconfiguration by taking into account the unique challenges that the reconfiguration of such boundary spanning resources provide. Furthermore, I extend the M&A literature by improving our understanding of the implications of M&As for the merging

companies' partners, including suppliers. Research in the organization and strategy field has largely ignored the implications of buyer-level M&As on suppliers. In the area of finance, however, some scholars have recognized that this is an important avenue for future research, as suppliers of merging companies will be affected in many ways, including changes in their client portfolios, performance, bargaining power, and even their future survival (Fee and Thomas, 2004; Shahrur, 2005). My findings also provide additional insights into the competitive dynamics following M&A. Previous research has focused on the direct implications of M&As for the competitive dynamics in the industries of the merging companies. Yet, the indirect competitive dynamics that may be triggered by potential knowledge spillovers through shared suppliers have been left unexplored.

Finally, the results of Chapter 5 contribute to the relational and resource based views, as well as to the IOR literature, by showing that it is well warranted to treat IORs as resources that contribute to firm performance. The benefits and performance implications of IORs have been well documented. However, with a few notable exceptions (e.g., Singh and Mitchell, 1996), empirical evidence on the implications of IOR change on firm performance or success is lacking. My results show that changes in ties need to be made cautiously as they may have a negative effect on performance, depending on the type of change as well as characteristics of the portfolio of ties. This is all the more relevant as not all changes in ties may be within the control of the firm, as I illustrated in the context of post-M&A tie continuation in Chapter 4.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The contributions and limitations of this dissertation indicate several additional avenues for future research. While I identified several gaps in the literature on the evolution and

dissolution of IORs in Chapter 2, particularly pertaining to the effects of strategic and environmental influences, I only empirically examined the effect of different corporate development activities. Hence, future research should examine how other strategic actions and environmental changes affect the evolution and dissolution of different types of IORs. In addition, with the exception of Chapter 5, I have focused on dyadic relationships. Yet, as I argued in Chapter 2, strategic and environmental factors may also alter firms' portfolios or networks of IORs. Empirical research is particularly warranted in this area, as most work to date has been of a conceptual nature or examined change in networks or IOR portfolios through sparse case studies.

Despite the advances made in this thesis on the interplay between different types of IORs, particularly in the area of experience spillovers between CDA and supplier-buyer ties, more work is needed on the underlying mechanisms that drive spillovers. Despite the richness of the data used in this dissertation, it is not sufficient to gain deep insights into the processes and decision mechanisms involved. The use of archival data throughout this dissertation has led to some additional limitations. While I take a two-sided view of the drivers of tie continuation in Chapter 4, I cannot determine empirically who ended the ties in the sample. Future research would benefits from a more in depth analysis of the actions of all collaborative partners under specific circumstances, provided it recognizes that both (or all) parties in an IOR may initiate these actions.

Lastly, although I believe that the findings in the advertising industry are reasonably generalizable to other professional services and even to manufacturing contexts, future research would benefit from studying the questions raised in this dissertation in different settings as well.

The goal of this dissertation was to provide insights into the drivers and performance implications of changes in inter-organizational relations, and supplier-buyer ties in particular. Answering the underlying research questions lead to novel insights and contributions to the extant literature. Nevertheless, numerous questions for future research remain.

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